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ABSTRACT

Presented is evidence on the increasing need to plan for the accommodation of the physically handicapped in the design and construction of present and future public buildings and transportation facilities in Canada. Terms such as "architectural barriers" and "disability" are defined. Statistics on disability incidence in Canada (one out of seven persons) are presented and reasons for the increase such as improved medical care and motor vehicle accidents are suggested. Psychological effects of architectural barriers are seen to include an increased sense of isolation and dependency. Recreation is thought to play an important role in the social life of the handicapped and to require more accessible facilities. Negative effects of architectural barriers on the economy are illustrated by hospital and housing costs and employment cost benefit figures for vocational education. Existing legislation on architectural barriers in Canada, Britain, and the United States is summarized and critiqued. A survey of public and private transportation problems of the physically disabled is reported. The major recommendation of the report is the need for a government affiliated coordinating authority with functions such as revising relevant legislative standards, conducting cost feasibility studies on elimination of architectural barriers, serving as a central source of information, and counseling individuals and organizations on accessibility features. Appended are a bibliography of 121 items and examples of pertinent forms. (DB)

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ARCHITECTURAL BARRIERS TO THE PHYSICALLY DISABLED

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INTRODUCTION

"WE SHAPE OUR BUILDINGS AND AFTERWARDS
OUR BUILDINGS SHAPE US."

- Churchill (32; p. 197).

The above quotation is never more true than in the case of those with physical impairments who are handicapped by obstacles within man-made structures. For these people, dependence or independence in many of their daily activities is determined largely by their physical environment.

Able-bodied man appears to have an inherent sense of invincibility regarding his personal physical health and abilities, and cannot effectively conceive of life without this good health or these abilities, permanently or temporarily. It is perhaps this sense of invincibility which explains man's apparent inconsideration and lack of empathy for physically impaired people, where architecture is concerned.

The Potomac Valley Chapter of the American Institute of Architects nationally surveyed their colleagues to determine their attitude and that of their clients towards the elimination of architectural barriers. The results of the survey reported:

> The unprecedented amount of building and re-building to come in the decades immediately ahead - readily projectable as being equal by the end of this century to the total of all construction now in place - provides an opportunity to make major near-term inroads on the accessibility of the man-made environment to all our people.
>
> Neither the cost nor the means are the real deterrants to realization of such a significant transition - lack of understanding is. (87; p.7).

The responsibility for this indifferent attitude lies with everyone. In a 1967 questionnaire survey of 10% of U.S. architects, numbering 2,975, by the National League of Cities, only 251 knew of the American Standards Specifications, although they had been published and distributed by the American Standards Association as early as 1961. (110; p.8). Only 34% of the architects surveyed were aware of the legal requirements of their state and local governments to provide accessibility to the handicapped in public buildings. (110; p. 40).

The architects, in turn, blame their clients. In the Potomac Valley Architects' survey it was reported:

> A major problem ... is the general lack of demand in the private market place for barrier-free design. Most clients seriously doubt any demand for barrier-free design can be demonstrated. Clients at present pay little heed to what may be described as their public responsibility to provide barrier-free facilities, particularly if it serves only a few people. The vast majority have not built with the handicapped in mind unless it served their self-interest or unless it was required by law. (87; p. 8).

With regard to the general population, a nation-wide survey of the public sponsored by the Federal Social and Rehabilitation Service, and reported in the July, 1968 issue of Paraplegia News (74) stated that two-thirds of all persons interviewed said they had given little or no though to the problem of architectural barriers.

Architecture schools must accept some responsibility for the neutral attitude expressed by their students and alumnae toward architectural barriers, for it is these educational institutions which mold the attitudes and ideals of future architects. A sample survey of eight architectural schools affiliated with major Canadian campuses obtained a total of five responses (see Appendix A)..Of these five, one did not return the questionnaire but wrote to say that no specific course dealing with the design problems of the disabled was offered. The other four responses represented a total enrolment of 890 students. None of the schools offered a course or even a series of lectures specifically on design standards

for the disabled on either a compulsory or optional basis. The only specific orientation to this topic, consisting of one lecture and film, was presented by a wheelchair-bound professor in one school. Another school, with an enrolment of 300, noted that the possibility of an orientation to architectural barriers was being investigated but at the time of the survey had not been implemented.

A. OBJECTIVES

The prime objective of this thesis is to present evidence which will convince those who read it that there is an urgent and ever-expanding need to plan for the accommodation of those with all types and degrees of physical impairment in the design and construction of present and future public buildings and transportation facilities. It is hoped that this objective will be achieved by:

1. defining "architectural barriers" and "disability";
2. indicating the magnitude of the problem through statistics;
3. suggesting reasons for the increasing size and severity of the problem;
4. suggesting the psychological effects of architectural barriers on the disabled;
5. discussing the social and recreational effects of architectural barriers on the lives of disabled people;
6. discussing the effects of architectural barriers on economy by studying hospital and housing costs, employment and education;
7. summarizing existing legislation on architectural barriers in Canada, Britain and the United States;
8. studying the public and private transportation problems and needs of the physically disabled;
9. recommending possible future action to achieve totally accessible architecture as rule rather than exception.

B. DEFINITION OF TERMS

Attempts to define the problem of architectural barriers to the physically impaired have met with confusion, misunderstanding and contradiction. What designates a handicap or disability?

Exactly what are architectural barriers? Whom do they affect, and what percentage of the population do the affected represent? Clarification of these questions from the outset is imperative, for this problem can be understood and solved only if the public fully comprehends the situation and the magnitude of its effects.

The task of illustrating those adversely affected by prevailing architecture is the most difficult and controversial. In "Access to Buildings for the Disabled - Progress in Britain", Goldsmith argues:

> In my opinion, it is impossible to define operationally the term disability so that individuals may be objectively categorized as either being disabled or non-disabled. It is impossible to say meaningfully what proportion of the population is disabled. (36; p. 39).

It is emphasized that "physical handicap" and "physical disability" cannot always be used interchangably. A disability is a handicap only under specific circumstances. A physical "disability" is a medically definable impairment of some body function(s). It becomes a "handicap" only when it prohibits activity of the pursuit of specific goals.

Since diverse physical disabilities prohibit the pursuit of specific goals relating to man-made structures, the person with a physical disability may then be said to be "handicapped" in the use of these facilities. Therefore, the words "handicap" and "disability" are used synonymously with reference to architectural barriers.

The writer contends that every human at some time has been, is, or will be handicapped by some aspect of architecture. Consider the pregnant woman, the person wearing a cumbersome lower limb cast, or the individual carrying packages or books encountering unyielding doors, bus exits, or stairs. When physical impairment is temporary, architectural barriers, although hazardous, may be tolerated simply because they are temporary. But what of those whose future holds no relief from architectural barriers? Temporary impairments are mentioned to stress that the elimination of architectural barriers would accommodate everyone. However, this thesis is primarily concerned with those for whom architectural barriers are permanent.

For the purposes of this paper, then, the classification of

the handicapped will be that utilized by the American Standards Association and the Canadian National Research Council in their respective publications on barrier-free specifications. This classification defines the handicapped in six subdivisions:

1. Non-ambulatory disabilities: impairments that, for all practical purposes, confine persons to wheelchairs.

2. Semi-ambulatory disabilities: impairments that cause persons to walk insecurely or with difficulty.

3. Sight disabilities: total blindness or impairments that affect sight to the extent that the person feels insecure or is liable to injury.

4. Hearing disabilities: total deafness or impairments affecting hearing to the extent that the person feels insecure or is liable to injury.

5. Co-ordination disabilities: impairment of muscle control in the limbs, to the extent that the person feels insecure or is liable to injury.

6. Disabilities of aging: those manifestations of the aging process that significantly reduce mobility, flexibility, co-ordination, and perceptiveness, but are not accounted for in other disabilities. (13; p. 3).

It should be noted here that this classification makes no reference to cause or duration of disabilities, thereby encompassing temporary and permanent, partial and total impairments which restrict mobility and agility.

The definition of "architectural barriers" suggested by the Minnesota Society for Crippled Children and Adults, Inc. in their publication, Architectural Barriers - Fading From the Scene in Minnesota, is concise yet comprehensive, and shall be used as a point of reference in this thesis. It defines architectural barriers as:

> ...any feature of the man-made physical environment which impedes or restricts the mobility of physically impaired people. It is also defined as any building feature which denies to the physically disabled full usage of its facilities. (67)

C. STATISTICS ON DISABILITY

Can the elimination of architectural barriers be justified in terms of the number of people who would benefit by their removal? Present statistics and prognostications for the future imply that elimination of architectural barriers is not only justifiable, but urgently essential.

Medical, social and scientific advances of the twentieth century, particularly in the last two decades, have inadvertently contributed to the steady increase in handicapped people.

Modern medical research has produced miracles in the prevention of death due to disease and trauma, but has secondarily magnified the number of people surviving with permanent physical disabilities. Every year hundreds of thousands of infants are born with permanently crippling diseases and defects. Some years ago their mortality rate was high, but today medical miracles save them, often with the prognosis of an average, though permanently handicapped, life expectancy.

Improved medical techniques and an increasing knowledge of the human body and disease processes have prolonged the life of millions afflicted with physically disabling conditions such as polio, multiple sclerosis, muscular dystrophy, and other neurological, circulatory and respiratory diseases.

Persons suddenly and severely handicapped by trauma have also been saved by modern medical skill and knowledge. P. L. Lassen, in "Voice of the Militant Cripple" remarked: "... twenty-five years ago, a man with a severed spinal cord had a life expectancy of six months from the date of injury. Today, a spinal cord injured paraplegic is expected to live a full chronological life - living in a wheelchair, or, though it is rare, walking on braces." (54).

The normal average life expectancy has been increased also as a result of improvements in medical efficiency and living standards. As the number of aged rises, the disabilities associated with the natural degenerative process - sensory loss (hearing and vision), reduced flexibility, strength and stamina - increases. The Dominion Bureau of Statistics reported that in June, 1970, there were an estimated 1,676,100 people over sixty-five years of age living in Canada, representing 7.8% of the total population.

Where once the severely disabled were destined to spend their remaining lives bedridden, the sciences have now combined their

technical skills to provide potential freedom in the form of prostheses, portable respirators, manual and power-driven wheelchairs, special adaptations for motor vehicle controls, and innumerable other aids for independence in mobility. With this mobility, the disabled need not be passive, but can participate in all aspects of living - educational, recreational, social and vocational. Now the barriers of man-made structures, not physical impairments, handicap independent mobility.

Many social factors have contributed to the increase in handicapped people today. In some respects, man is a victim of civilization and technology. Mechanization has created a multitude of sedentary occupations, with a resultant upsurge in respiratory and circulatory disorders. Mechanization introduced air pollution, and the incidence of debilitating respiratory conditions such as emphysema has soared as a result. The machine has brought industrial accidents, and the number temporarily or permanently injured mounts annually. The United States Department of Labour Statistics reported that 2.2 million employees were disabled in industrial accidents and 10 million more were injured in 1967 alone. (75; p.20). Finally, mechanization created much leisure time which has produced still more disabilities, through skiing, swimming, boating, snowmobiling, cycling and other sports mishaps.

Another social factor indirectly contributing to the number of disabled is the Western style of living, with eating habits resulting in obesity and circulatory disorders and smoking resulting in respiratory ailments. An affluent economy provides an ever-increasing number of motor vehicles and an aggressive, hurried attitude to living to swell the ranks of the disabled by way of highway accident victims. With reference to motor vehicle accidents, Leon Chatelain wrote: "Authorities anticipate that over 200,000 traumatic paraplegics yearly will be added to our list of handicapped." (19; p.1). And this accounts for only one category of injury!

Statistics on the number of disabled vary considerably depending on source, due to the controversy regarding the definition of "disabled" in relation to architectural barriers. Furthermore, accurate statistics on all disabled people according to impairment are impossible to obtain. Canada lacks a national system of registration for the disabled, thus leaving figures and estimates to the various organizations dealing with disabled people. Since membership with these organizations is generally voluntary, the validity of the statistics is questionable. Given the statistics,

however, it is obvious that the number of the disabled could only exceed the quoted figures.

In "Buildings and Handicapped Citizens", Legget states: "One Canadian in every seven has a permanent physical disability or an infirmity associated with advancing age; and at least half a million suffer some serious physical handicap that impairs normal movement." (55; p. 77-1). This represents one of the most quoted estimates and is based on the classification of disability outlined previously.

William N. Hunt, of Special Inquiries, Year Book Division of the Dominion Bureau of Statistics (48) has provided the writer with more detailed figures and estimates on the disabled in Canada. Mr. Hunt's information states that, according to the Rehabilitation Services Directorate of the Department of National Health and Welfare, the estimated number of physically handicapped in Canada in 1970, including congenital defects, traumatic injury and infectious diseases, was 250,000. There were an additional estimated 1.6 to 1.7 million Canadians suffering "restricted activity" due to chronic and degenerative diseases such as arthritis, circulatory ailments and diseases of aging. The Executive Secretary of the Canadian Heart Foundation estimated that, in 1970, 500,000 Canadians with cardiovascular disorders were "...unable to do a full day's work" (98), and 175,000 of them "... would have a disability severe enough for architectural barriers to present problems." (48)

In a 1970 Department of National Health and Welfare report to the United Nations, the International Labour Organization and the World Health Organization (25), it was stated that, as of December, 1969, there were 27,184 Canadians registered with the Canadian National Institute for the Blind.

Again, it is emphasized that these estimates and statistics do not indicate the total disabled in Canada, if all causes and duration of impairment are to be considered as specified in the definition.

The past and present statistics and forecasts for the future relating to the number of people who are or will be handicapped by existing architectural design, clearly indicate that an extensive program for elimination of architectural barriers is justified.

CHAPTER II

PSYCHOLOGICAL EFFECTS

> Designing for the Disabled does not attempt to justify its advocacy of special facilities for disabled people in buildings on economic grounds...it relies simply on the democratic principle of equal human worth...(38; p.389)

It is psychologically indispensable that every human being feel that he is of some worth to his family and ultimately, to society. The ravages of birth deformity, disease or accident cannot change the essential worth of a man, but his attitude, and that of others, can.

Many disabled people undergo unimaginable fear and pain, producing psychological shock. When the pain and shock fade, depression and frustration close in. Hospital teams spend time, effort and public funds to allay the fear, pain and despondency in order to rehabilitate the patient. Only after these corrosive psychological elements are dispelled can rehabilitation start, for a healthy mental outlook forms the foundation of successful and continuing rehabilitation. Upon departure from the hospital, the paraplegic, for example, has been taught - to the best ability of hospital staff - personal dignity and worth, together with all possible independence.

The first area of contention for the recently discharged paraplegic is his home. "Housing is one of the most meaningful possessions men can have...house and home stand at the centre of people's lives; the focal point of intensely felt human needs..." (102; p. 11). What manner of emotional blow does the paraplegic suffer when he discovers he cannot navigate in his own surroundings? What type of deprivation must a man feel when he realizes he can no longer provide for his family or readily participate in their activities? The paraplegic now discovers a new fear - realizing that if his own environment is difficult to manage, the social environment will be worse. The patient involuntarily withdraws from interpersonal relationships rather than leave his own home. Instead of being a comfortable haven,

his home becomes a prison. The resultant claustrophobia has a very definite psychological effect.

In "Does Modern Architecture Recognize the Needs of the Handicapped?" M. S. Bray quotes Dr. M.C. Misick, National Director of Patient Services of the Multiple Sclerosis Society in Canada as saying:

> The psychology of the handicapped has frequently been called the 'psychology of frustration'. I invite each of you to spend a week, even a day, in a wheelchair, going about your business, going to work, eating in a restaurant, using a bank, a post office, a public telephone, attending a church, theatre, to function as a paraplegic for twenty-four hours. You will not have lived as a paraplegic. You will not know what it means to be in a wheel chair 365 days a year, but after just one day you will be able to give a more accurate evaluation of the psychology of the handicapped, than any Ph.D. in any university, and you will know why we need building modifications. (8; p. 19)

In "The Signposting of Arrangements for Disabled People in Buildings" (40; p. 13), Goldsmith states that the disabled cannot be treated as "normal" but as special people with special needs. Total independence is not necessarily the criterion, but architects must design for the statistically normal population and a parallel and equally distinctive abnormal population.

Architects in particular and society in general must be made aware of the humiliation suffered by "back door citizens". After striving for independence in hospital surroundings the paraplegic might now have to enter a restaurant through the kitchen, be barred from a church because of steps, or require assistance in a bathroom where assistance would not be necessary were there proper facilities for the handicapped.

The frustration of trying to maneuver his wheelchair into a voting booth, or trying unsuccessfully to drink from a water fountain, and the anxiety of wondering whether a certain building is accessible, and once inside, whether he will be able to depart rapidly in case of emergency, has a very real and adverse psychological impact.

When the physically handicapped encounter architectural barriers, they are forced into dependency in order to overcome

these barriers. This dependency has psychological implications. When a person depends on another human being for mobility, execution of daily activities, provision of daily needs, and in some cases, for life itself, he then must face the question and helpless panic at the thought of life's problems, should illness, disability, or death take away his benefactor.

The elimination of architectural barriers would partially reduce some of the frustration of the handicapped and would enable them to participate actively in social, recreational and community affairs, thus alleviating much of the psychological trauma associated with physical impairment.

CHAPTER III

SOCIAL EFFECTS

Closely associated with psychological effects are the adverse effects which architectural barriers have on the social and recreational lives of the physically disabled. To justify the elimination of architectural barriers in recreational facilities, one need only emphasize that recreation is essential and that these barriers prohibit many physically impaired people from enjoying recreational activities.

"Recreation" as defined by Pomeroy is "...a worthwhile socially accepted leisure experience that provides immediate and inherent satisfaction to the individual who voluntarily participates in an activity." (86; p.20)

As Guttmann (44) mentioned in "Sport for the Disabled as a World Problem", progress creates automation, which in turn creates a civilization of leisure. The disabled as well as the physically fit are affected by the reduction in working hours, and must find alternate outlets for physical and mental activity. Unless this segment of society is accommodated in recreational facilities, this outlet for energy release will be obstructed, forcing disabled people into restricted, isolated patterns of life.

The numerous benefits of recreational activities are now generally recognized, as evidenced by the increasing emphasis placed on sports and all other forms of recreation in the field of education.

Active recreation enhances physical attributes such as strength, co-ordination, speed, endurance, stamina, and balance. While these are worthwhile endeavours for the able bodied, it must be recognized that they are even greater assets to those with physical impairments. For this latter group, disease or accident has disrupted"...to a greater or lesser degree the precision, economy, and course of the normal movement-patterns of the body". (44; p.29). Sports for these people have a therapeutic value, by assisting them to overcome weakness, stiffness, inco-ordination and fatigue.

Over and above the physical value of recreation, the physically disabled voluntarily participating in recreational activities reap innumerable psychological benefits. Recreation contributes to the rehabilitation process by encouraging a good mental and emotional outlook, without which successful rehabilitation cannot be realized. Recreation takes the mind off disability and emphasizes positive remaining abilities by developing latent or discarded pre-disability skills. B. H. Lipton, in "The Role of Wheelchair Sports in Rehabilitation", explained:

> He is encouraged to realize his full social potentialities which, in turn, changes his attitude from one of constant concern about his limitations to striving for the full realization of his capabilities. (56; p.21).

The expression of oneself through recreational activities fosters a sense of self-confidence, accomplishment, worth and dignity, often providing an emotional release which assists in the acceptance of the disability.

The opportunities provided by recreational activities may rarely or never occur in other aspects of life - particularly in the necessarily restricted lives led by many disabled people. Recreation establishes a potential capacity for social integration into community life. Motivation to learn in the area of recreation encourages continued mental growth, expanding horizons instead of allowing physical restrictions to reduce them. Some recreational activities such as community service projects provide a sense of service, a means of reciprocation by a disabled person who constantly relies on others.

Recreation satisfies many fundamental needs and desires for disabled people, in that it may be the only area in which a disabled person may function with his family. The opportunity to share common interests, maintains and strengthens family relationships. Disabled people suffer the same physical, mental and emotional tensions as the able-bodied, and in addition their disabilities compound this tension. Recreational activities are a primary source of relaxation.

In cases of congenital defects, a child and his disability often are inadvertently made the focus of attention with a family. Unfortunately, these children sometimes fail to learn responsibility, sharing and co-operation with others, patience, justice, tolerance and good sportsmanship. Recreational activi-

ties with other children, disabled and physically fit, teach these virtues to a previously disability-oriented child and foster independence and self-direction. Recreation is an excellent teacher of good citizenship and democracy, as Pomeroy emphasizes:

> Recreation for the handicapped dramatically demonstrates the essence of democracy, for it provides activities which recognize the essential worth and dignity of the handicapped as individuals, together with their right to the pursuit of happiness. (86; p.30)

Perhaps one of the greatest benefits of recreation is the opportunity for socialization and fellowship. Writers disagree on the subject of whether recreation for the disabled and for the physically fit should be integrated or segregated. Communication between these two groups is essential for mutual tolerance, understanding and acceptance, and what better atmosphere for learning than through shared recreational activities? The preference of a physically impaired person for integrated or segregated recreational activity is not of principal concern - the fact that he has the freedom to choose is. This choice should not be dictated by architectural barriers in public recreational facilities.

Recreational activities in general, and sports in particular, have contributed to the acceptance of physically handicapped people by the non-disabled. Organized wheelchair sports have reached an international level, and one of their greatest successes has been the increasing coverage of these activities by the mass media. This coverage has demonstrated to the non-disabled that with patience, endurance, and incomparable determination, the physically handicapped are capable of "normal" activity. The impact of this has been a gratifying increase in the acceptance of the disabled in employment and all other aspects of society. Lipton stated that the sports programs for the physically disabled in the United States "...demonstrated unquestionably that the participants have developed greater motivation for training and for work, as well as for active participation in community groups, civic and other associations". (56; p.21)

Sports and recreational activities for the physically impaired population is a means to an end - "In all cases of physical handicap, the object of sport is to restore and maintain to a maximum the physical and psychological equilibrium of the

disabled person and thus enable him to come to terms with his physical defect and face up to daily life in spite of his disability". (44; p.29) The expanding fields of occupational, physio- and recreation therapy prove that the medical world is convinced of the rehabilitative value of recreation. Throughout rehabilitation and after discharge, the hospitalized disabled person is encouraged to utilize the vast array of recreational equipment and services for his physical, mental and emotional betterment. In many instances, he comes to rely on capabilities learned through recreation for self-confidence and self-respect, for they are visual proof of ability. However, as Schoenbohm and Schwanke (97; p.251) indicate, it is nearly impossible to find community facilities which are accessible and usable.

The ablebodied are rewarded by travel, scholarships and monetary gain for ability and dedication in recreational endeavours. The physically handicapped should be similarly rewarded for determination and hard work, and the greatest prize would be accessible facilities.

CHAPTER IV

ECONOMIC EFFECTS

Unfortunately, financial gain is more powerful in initiating reform than any moral or humanitarian obligations. Individuals and organizations campaigning for the welfare of physically handicapped people through elimination of architectural barriers perhaps have erred by over-emphasizing the humanitarian rationale to achieve accessible architecture. The economic advantages have been obscured by emotionalism, while it is financial facts which will convince legislators, builders and businessmen that their support is warranted. Therefore, this chapter is intended as evidence that the elimination of architectural barriers would be profitable, as well as morally right.

A. EMPLOYMENT

Maximum success in rehabilitation by creating contributing taxpayers can exist only when the world strives to accommodate the disabled while the disabled learn to minimize their physical impairments to adjust to their environment.

The rehabilitation of the physically impaired to maximum capabilities is a long and expensive task and in Canada is primarily financed by public funds.

Besides taking full advantage of medical benefits such as doctors' fees, hospital, x-ray, social services, therapy and all other services provided under the national medical care program, many physically disabled people also may qualify for benefits under the Vocational Rehabilitation of Disabled Persons Act (1961) (25; p.3), the Canada Pension Plan (1965) (25; p.4), and the Canada Assistance Plan (1966) (25; p.12).

The Canada Pension Plan states:

> To be determined disabled, an applicant must be suffering from a severe and prolonged mental or physical disability that prevents him from regularly pursuing any substantially gainful employment. (Section 43 (2). (25; p.4).

There are, quite conceivably, many disabled people capable of employment, but forced into accepting government

assistance in lieu of a salary due to inaccessible places of employment. It would be economically sensible to make these people taxpayers instead of tax recipients by providing accessible places of employment.

The Vocational Rehabilitation of Disabled Persons Act (1961) provides:

> ...services and processes of restoration, training, employment, or placement to dispense with necessity for institution care or the necessity for the regular home service of an attendant. (25; p.3).

The Department of National Health and Welfare report to the United Nations, International Labour Organization, and World Health Organization (25; p.87) estimated that 15,000 disabled persons received vocational rehabilitation services in Canada annually through the Vocational Rehabilitation of Disabled Persons Act and Agreement. This estimation excludes those disabled by industrial accidents who come under the jurisdiction of provincial Workmen's Compensation Boards and those veterans served by the Department of Veterans Affairs.

Once the disabled have been provided means of economic independence through great rehabilitation expense, the business world is frequently unable to offer employment in accessible buildings including work area, washrooms, dining facilities, telephones and emergency exits. This being the case, then the phenomenal total of tax dollars used in vocational rehabilitation has been wasted.

Paraplegia News, May, 1968, reported:

> For every $1,000 spent by federal and state agencies for vocational rehabilitation of disabled persons, there will be an expected increase of more than $35,000 in the lifetime earnings of each rehabilitated man or woman.
>
> Not included in the estimates were such additional benefits of vocational rehabilitation as reductions in the cost of maintaining disabled persons in tax-supported institutions, decreased public assistance payments, and less need for aid from relatives and friends. (73)

The above quoted increase in economic well-being for rehabilitated disabled persons is unrealistic should the person be unable to find employment because of inaccessible premises.

B. EDUCATION

It is reported in Legislation, Organization and Administration of Rehabilitation Services for the Disabled in Canada, 1970, that "within the school systems there is a move to integrate children with handicaps into the regular classrooms, wherever possible." (25; p.76). The plan is an admirable one, for it will provide valuable experience for both the able and disabled. However, unless there is a preceding campaign to eliminate movement barriers within school facilities, such integration would serve only to instill fear, frustration and a sense of helplessness in disabled children. Their development is already hindered in relation to their able-bodied peers by reason of their physical impairments. Architectural barriers would only maximize the disadvantage. In addition to the psychological benefits achieved by integration of physically disabled children into public school systems, there are also financial benefits as noted by Nugent:

> An unnecessarily large proportion of our permanently physically disabled people have had to be placed in hospital-schools and orthopaedic schools for their education. The cost per capita of such schooling is many times the cost per capita when they are included in the regular school system, and the multitude of other benefits to be derived by these people, were they to be properly included in regular schools, reaches on into infinity. (69; p. 52)

Post secondary education is a further economic consideration in eliminating architectural barriers in educational facilities. In this technological age, a trade or profession is essential to enable a person to compete in the labour market when he must rely on mental, rather than physical abilities. These facts point to the necessity of accessible facilities of higher education for the physically impaired. If barred by architectural barriers from furthering his education, a disabled person may also be barred from financial independence, and thus become a tax burden.

C. HOUSING

The dominion Bureau of Statistics has tabulated the operating expense of Canadian public hospitals, of various categories and sizes, in Hospital Statistics, Volume VII - Hospital Indicators, 1968,

(See Appendix B). The statistics represent all costs associated with daily hospital operations in providing service to patients. It was calculated that the average cost per bed per day in general hospitals was $38.62; chronic extended care hospitals, $20.24; and"other" categories of hospitals, $47.50. Since hospitals seldom operate at full capacity, average costs calculated on a per patient basis are somewhat higher: in general hospitals, $48.44, in chronic extended care hospitals $21.67 and in "other" hospitals, $69.17.

The fact cannot be ignored that there are physically impaired people in hospitals merely because they cannot cope independently with the physical environment outside the hospital. These patients require minimal medical attention and perhaps some assistance in daily living activities, but could function on an outpatient basis with a part time or permanent attendant, given an accessible dwelling place that did not compound their physical limitations by architectural restrictions. Even the optimum situation - a private suite in a commerical apartment block with a full time attendant, could hardly exceed the cost of this group's present living circumstances - a room in a hospital costing from $640.10 to $2,075.10 per month, depending on type of hospital. Furthermore, there are numerous disabled who do not require this maximum, out-of-hospital care. In these cases, the saving realized would be greater if the patient could be accommodated in a boarding home, hostel with communal dining, washroom and recreation facilities, low cost housing development or private shared facilities in an apartment. This saving is unattainable until the above facilities are made available and accessible to the presently hospitalized disabled.

The Bureau of Chronic Diseases of the California State Department of Public Health, in January, 1969, presented a report entitled Residential Care Needs to the California State legislature. One section of the report detailed a cost study of caring for severely physically disabled but mentally normal people in various settings. For the purpose of this study "residential care" referred to "...not a special institution to house handicapped persons...but...all types of services and living arrangements appropriate for individuals who are severely physically handicapped but of normal mentality." (11; prologue). Briefly, the financial findings of the study indicated that the annual per capita cost, "...in addition to what is paid from other sources...", was $4,000.00 for "regular institutionalization" (11; p.56), $6,500.00 for "special institutions for the handicapped" (11; p. 57), and $1,719.00 for "residential care" (11; p.56). These figures clearly indicate that, where special architectural consideration is granted to the needs of the physically disabled, projected cost is substantially less.

D. INSURANCE

An economic consideration not often associated with the elimination of architectural barriers is insurance. An article in the September, 1964, issue of the Journal of American Insurance, entitled "Banning Those Barriers", makes the following points in relating architectural barriers and insurance (6; p.4):

> WORKMEN'S COMPENSATION: Rehabilitation and re-employment of job-injured workers is the chief goal of our workmen's compensation system. Workers who can gain employment after a job injury benefit by being self-supporting and productive. Employers benefit from rehabilitation through reduction in compensation insurance premiums. Also, elimination of barriers reduces the chances of work-connected accidents involving able-bodied workers.
>
> PUBLIC LIABILITY: Surveys of buildings that have aids for the handicapped indicate that such buildings have fewer tripping and falling hazards, thus reducing public liability claims. Nonslip floors and ramps, for example, lessen chances of accidents. Under experience rating plans, policy holders may gain rate reductions on public liability policies by breaking their architectural barriers.
>
> FIRE: Standards recommended for aiding the handicapped also meet the highest fire prevention standards. Wide doors and ramps permit rapid evacuation. Improved placement and marking of fire alarms may speed notification of fire departments.
>
> HEALTH AND ACCIDENT: Fewer accidents in public buildings would reduce losses and rates under health insurance policies. And, project leaders point out, provision of self-help facilities for the handicapped eliminates the need to carry disabled persons, a practice that frequently results in painful and costly back injuries.

E. CONSTRUCTION COSTS

A major consideration in justifying construction of accessible

public buildings is the actual cost of barrier free architecture. It has often been argued that accommodation of the disabled is an extra expense non-justifiable in terms of utilization. Admittedly, the remodelling of buildings to make them accessible is costly or prohibitive, especially where the addition of elevators is concerned. However, using foresight by incorporating accessibility features into the structure at the planning stage, makes any additional cost negligible. A National League of Cities cost study investigated three newly constructed public buildings - a civic center, a city hall, and a hotel. "Comparing what was spent to what would have been spent to make these buildings accessible to the handicapped, the League found that the increased cost would have been less than one tenth of one percent." (110; p.7) Certainly this limited additional cost is warranted in view of the benefits reaped by the disabled population.

Barriers to people are barriers to sales and service. The estimated three million Canadians who have "...a permanent physical disability or an infirmity associated with aging" (107) are potential buyers with consumer needs comparable to the able-bodied. A wise businessman would profit by accommodating the growing population of physically impaired in an accessible business establishment.

CHAPTER V

LEGISLATION

Effective leadership to enact and enforce reform must spearhead any movement hoping to solve effectively the tremendous and perplexing problems created for the physically disabled by architectural barriers.

Through extensive research, the architectural needs of all degrees of physically disabled people have been clearly defined and standardized. This research has culminated in publications such as Supplement No. 7 and Supplement No. 5 to the National Building Code of Canada, the American Standards Association Specifications, and the British Standards Institute Code of Practice, all of which concisely blueprint, in linear terms, the method of eliminating architectural barriers. These standards are useless if not applied; the most effective means of ensuring universal application being strict legislative enforcement.

This chapter briefly traces legislative development to its present status in Canada, and for comparison, in Great Britain and the United States.

A. GREAT BRITAIN:

Great Britain has unique legislation to eliminate architectural barriers. Assuming tnat people have differing degrees of disability and that buildings have differing functions, elimination of architectural barriers has been planned accordingly.

In 1967, the British Standards Institution published general recommendations in Part I of the British Standard Code of Practice CP 96. (10) It was intended that this part of the code be incorporated into all new public buildings until the completion of investigations on the requirements of specific building types. The ultimate goal of the investigations was the publication of disability and design standards as contained in Part I for various building types, that is: business, transport, health and welfare, refreshment, worship, recreation, culture, education and public housing.

In addition to individual building types, both the general recommendations and subsequent parts outline suggested design

according to the disability. The categories of disability are: sensory - sight and hearing - and locomotor/manipulatory, which are further subclassified as "ambulant disabled" or "wheelchair bound".

As in the National Building Code of Canada supplements relating to design standards to accommodate the physically handicapped, the British Standard Code of Practice uses the word "shall" to indicate mandatory requirements, and the word "should" for recommendations. Unlike the Canadian supplements, however, the British standards clearly define the two words as they apply: "In this Code, the word 'shall' indicates a requirement that is to be adopted in order to comply with the Code, while the word 'should' indicates a recommended practice". (10; p. 7)

Each section of the Code of Practice which outlines the design requirements of each disability category begins: "When provision in a building is to be made..." (10; p. 10) This implies that, while building allowances for the phsyically disabled are optional, should provisions be made, certain design standards, as noted in the Code of Practice, are mandatory. This being the case, the Code is of questionable value since actual enforcement of the standards is lacking.

UNITED STATES:

Perhaps the United States has the most advanced legislation in the world to eliminate architectural barriers for its physically disabled citizens.

The extensive campaign originated when a committee, with Leon Chatelain, former president of the American Institute of Architects as Chairman, and Professor Timothy Nugent, Director of the Rehabilitation Centre at the University of Illinois as Secretary, was appointed to prepare a code of practice to guide architects and builders in the architectural needs of the physically handicapped. Research projects studying anthropometric characteristics of disabled students at the University of Illinois applied the results to architectural design, and developed a standardization to best serve the majority of physically disabled people. The American Standards Association formally approved and adopted the compiled and published standards on October 31, 1961. The late President John F. Kennedy officially supported these standards and a national crusade urged voluntary action and legislation of the standards at all overnment levels. Immediately

following its publication, the President's Committee on Employment of the Handicapped mailed copies to all registered architects, building contractors and building code officials in the United States.

On November 8, 1965, a National Commission on Architectural Barriers was officially established within the Department of Health, Education and Welfare "...to examine the extent to which architectural barriers hinder the use of buildings by handicapped people, and the measures that are necessary to achieve the goal of ready access to and free use of all buildings". (38; p. 388) The committee also provides national publicity to agencies concerned with architectural barriers.

The State of South Carolina was first to adopt as mandatory the American Standards Association specifications on May 7, 1963. The bill thereafter prohibited the use of state funds for any new construction or remodelling any existing construction without adherence to the standards.

Dantona and Tessler (22) conducted a national mail survey to determine the legislative progress in the elimination of architectural barriers to the physically handicapped as of July 1, 1966. Their findings were as follows:

- 11 states had enacted legislation making the entire American Standards Association specifications mandatory;

- 8 states had adopted the specifications as mandatory, but had included "escape clauses" such as... "as far as it is feasible..." which, in the opinion of the authors, negated the laws;

- 5 states enforced acts on architectural barriers without the reference to the American Standards Association specifications. These, too, were deemed inadequate by the authors;

- 2 states had legislative resolutions and endorsed the American Standards Association specifications, but did not make the standards mandatory;

- 3 states had non-compulsory legislative resolutions urging the elimination of architectural barriers but did not endorse the American Standards Association specifications;

- 2 states had non-mandatory administrative directives from the governor relating to the American Standards Association's outline to future construction;
- 12 states had no legislation;
- 7 states provided insufficient data for adequate evaluation.

An analysis of government action by the National League of Cities, included in the December, 1967, federal government publication Design for ALL Americans (110), indicated that, of 379 surveyed cities with populations exceeding 50,000 persons, only 95 had initiated programs to eliminate architectural barriers, and 39 of these 95 cities had yet to take official action. Only 42 of 272 metropolitan counties reported a program. Only nine of the 95 cities and five of the 42 counties had incorporated the standards into their building codes. All other action was in the form of resolutions on new public buildings only.

It is evident that notwithstanding U.S. progress against architectural barriers, that nation must accomplish much more before architectural barriers are eliminated.

The American state governments appeared to lead the federal government in legislative action against architectural barriers. Despite the 1961 presidential endorsement of the American Standards Association specifications and 1965 incorporation of a National Committee on Architectural Barriers, not until August, 1968, did Public Law 90-480 (see Appendix C) come into effect requiring specified public buildings, whether constructed, altered, wholly or partially leased, wholly or partially financed by federal funds, to be accessible to and usable by the physically handicapped.

On December 15, 1969, the House of Representatives passed a bill amending Public Law 90-480 to provide adequate facilities for the physically handicapped on federally funded transportation systems. By February 10, 1970 the House of Representatives and Senate amendments had been made and the bill awaited only the president's signature. (83)

On July 23, 1970, a further amendment to Public Law 90-480 was introduced to provide deductions for expenditures incurred while making allowances for the handicapped in private facilities. (85) To the writer's knowledge, no further action occurred after the bill's referral to the Ways and Means Committee.

CANADA:

The Canadian federal government took initial steps to alleviate architectural barriers to the handicapped early in the last decade. Meetings between Departments of Labour and National Health and Welfare representatives resulted in assignment of the Division of Building Research of the National Research Council to develop standards for barrier free architecture in Canada. In May, 1963 the Committee on Standards for the Handicapped was formed. In 1965, using standards established by other countries as guidelines and supplementing these with original research, Supplement No. 7 was added to the National Building Code of Canada.

On June 1, 1970, Randolph Harding, Member of Parliament representing Kootenay West, stated in the House of Commons:

> There is a Supplement No. 7 to the National Building Code called 'Building Standards for the Handicapped'. However to date I understand that the federal government has not made these building standards mandatory even in the construction of federal public buildings. In my opinion, this is something that the minister and the government should look into without delay. Our federal government should give leadership in this field by prohibiting the construction of its own public buildings unless there is a provision for easy access by disabled people. I am certain that if the provisions were strictly adhered to on a federal basis, it would not be long before other jurisdictions accepted similar changes to their legislation. (see Appendix D).

Mr. Harding requested that Supplement No. 7 of the National Building Code of Canada be made mandatory for all Canadian federal public buildings. A transcript of the House of Commons proceedings incorporating the response made by the Honourable Mr. Arthur Laing, Minister of Public Works (see Appendix D) indicates that Mr. Laing quoted from Supplement No. 7: "The following mandatory requirements constitute the minimum standards for projects for the Department of Public Works: - "

On searching the entire supplement for the words which Mr. Laing quoted, the writer found only contradiction to his statements, namely -

> As a supplement to the National Building Code of Canada, this document has no automatic mandatory position when the Code is adopted for use by federal, provincial, or municipal governments. The supplement is written as a guide for those interested in the design and construction of buildings with provision for making them usable by physically handicapped. (12; p. 1).

Supplement No. 5, published in 1970 as an updated amendment to the 1965 edition, includes a section on housing but again avoids the real issue of making the standards mandatory, as illustrated by the announcement on the first page and back cover: "It has no legal standing unless appropriate parts are adopted by a provincial government or municipal administration." (13; p.1).

The ambiguity of the Canadian federal government's position on mandatory building standards to accommodate physically disabled citizens need hardly be emphasized. If a Canadian member of parliament such as Mr. Harding, undoubtedly acquainted with parliamentary procedure and formal legislative terms, is confused over the government's position regarding Supplements No. 7 and 5, one can well understand the confusion and reluctance in the minds of architects, planners and building contractors.

Once it was discovered that the Canadian federal government does, indeed, have a legislative policy regarding architectural barriers, the magnitude of this legislation and the consequent impact on the lives of physically disabled Canadians was apparent.

The number and relative importance of the buildings for which the accessibility standards are compulsory render this Act insignificant. Allowance is made neither for compulsory alteration of existing federal public buildings providing accessibility to the physically handicapped, nor mandatory incorporation of necessary features in buildings presently rented by the federal government to house federal employees. Buildings and facilities vital to the physically disabled - residences, schools, places of business, shopping and recreational facilities - are completely ignored by this token legislative effort.

Consider also the limitations of the Standards themselves. Supplement No. 5 specifies that "the words 'shall' and 'should' are also to differentiate between the essential and desirable requirements in these Standards. The word 'shall' is used to indicate those requirements suitable for inclusion in legislation". (13; p. 1).

By way of example, new public federal buildings must possess at least one entrance measuring thirty-two inches wide; thereby accessible to, and usable by a wheelchair occupant, but multi-storey buildings need not possess an elevator. This enlightened situation is excellent should the physically handicapped person require only the services of the information desk and the telephone switchboard usually located on the main floor. Business on the second floor is prohibited, however, due to the fact that elevators are not mandatory.

It is not suggested that architectural barriers to the physically disabled have been completely ignored in Canadian legislation. The New Brunswick and Nova Scotia governments have made mandatory the requirements of Supplement No. 7, and other provinces such as Ontario and Manitoba are considering similar legislation. Various municipal governments have also adopted these standards into their codes, in whole or in part. For example, on February 26, 1970 the Metropolitan Corporation of Greater Winnipeg Council enacted By-Law No. 1643 (15) to add Supplement No. 7 to the existing mandatory building code in the design of specified public buildings. Where legislation is non-existant, individuals and organizations concerned with the physically disabled are conducting private campaigns aimed at persuading architects, planners and builders to consider the needs of the disabled in their future projects.

Such diffuse efforts are insufficient and unless backed by immediate legislative action they may well prove to be negligible in the ultimate goal.

The Minnesota Society for Crippled Children and Adults, Inc. noted in a legislative report that "...according to the American Institute of Architects, more buildings will spring up in our country (United States) within the next thirty years than have been built since the early Europeans first came to our shores nearly five centuries ago." (67; p. 4).

The growth rate of Canadian urban centres is similarly proceeding at an unsurpassed rate. Unless all governmental bodies

immediately provide comprehensive and strictly enforced legislation for the successful elimination of architectural barriers, the physically handicapped will suffer the repercussions of this hesitation and lack of foresight for decades.

Other existing legislation should be amended to encompass disabled citizens, thereby ensuring them of equal opportunity in all things, including accessibility to public buildings. R. W. Schwanke, in the article "Eliminate Architectural Barriers to the Handicapped", noted: "By any definition, the handicapped person is most surely a member of a minority group, his needs and rights are not always clearly recognized, understood, or defined, either by experience or by law." (99; p. 135).

The Code of Conduct in the Alberta Human Rights Act states: (5)

> No person, directly or indirectly, along or with another, by himself or by the interposition of another, shall:
> (a) deny to any person or class of persons the accommodation, services, or facilities available in any place to which the public is customarily admitted, or
> (b) discriminate against any person or class of persons with respect to the accommodation, services or facilities available in any place to which the public is customarily admitted, because of the race, religious beliefs, colour, ancestry or place of origin of that person or class of persons or of any other person or class of persons.

An amendment to this and the federal Human Rights Act forbidding discrimination against the physically disabled would, among other benefits, ensure the use of Supplement No. 5 in private and public construction by individuals and organizations. Constructing buildings or facilities not allowing free access and use by the physically handicapped would constitute a violation of human rights as outlined in this Act.

The foregoing is the present status of legislation against architectural barriers to disabled people in three nations boasting equality for all citizens. This is the legislation upon which the freedom of millions of physically handicapped people depends.

Change is obviously and vitally needed.

CHAPTER VI

TRANSPORTATION

While transport vehicles are not ordinarily described as "architecture" in the true sense of the word, a discussion of transportation as it relates to the physically disabled is nevertheless included in this paper. This inclusion tends to be justified when considering that transportation and its barriers have psychological, social, economic, educational and recreational significance parallel to, and associated with, architectural barriers.

Bray and Cunningham cited actual case studies wherein "... many situations where disabled persons were given complete vocational rehabilitation and job training, only to find that they could not make use of this training since they were unable to go to and from places of employment". (9; p.98) Schweikert states: "Another study of a controlled sample of various disabilities estimated that there were perhaps at least one and one-half million employable handicapped in the nation (United States) who could obtain jobs if they were provided transportation. These were judged to be employable by physicians and/or vocational rehabilitation agencies." (101; p.10) In many instances, transportation costs between home and employment (taxis generally being the only accessible transportation) have been prohibitive and employment proved to be unprofitable. The need for mobility by the disabled, however, extends beyond employment to all other conditions of living - utilizing educational and recreational facilities, undertaking daily chores, and enjoying a gregarious existance natural to human beings.

In the past fifteen years, increasing public awareness of architectural barriers has been effected to the point where these barriers are very gradually being abolished. These strides will be for naught, however, unless transportation methods are developed for free movement of the permanently or temporarily handicapped between improved architectural structures. Mr. Schweikert advocates: "Accessible and usable transportation is the last vital link which will finally give the disabled and handicapped access to the full life". (101; p.11)

A. PUBLIC TRANSPORTATION

In order to assess the provisions presently being made for

disabled travellers in Canada, the writer conducted a survey on a sampling of companies offering various types of public transportation. Included were taxi cab companies, auto rental agencies, a long distance bus company, a passenger ship company, railways and airlines. This survey was not intended as comprehensive or all encompassing, but is offered merely as an indication of existing transportation facilities for the disabled in Canada.

1. Taxi Cab Companies

A questionnaire (see Appendix E) forwarded to nine cab companies currently operating city wide, 24-hour service in Edmonton, Alberta, resulted in only three responses, representing a total of 574 vehicles, eighty-two per cent of which were driver owned. This figure is significant since one would not expect an individual driver to provide a special van and equipment to cater expressly to the disabled. One might reasonably assume, then, that the disabled must depend on a company which owns its vehicles to provide specially equipped facilities and this, unfortunately, is not a widely practised procedure in the taxi industry.

Of the 574 vehicles, only one was a van equipped with ramp and wheelchair. The company recommended 24 hours notice to ensure arrival of the van at the requested time, and the cost was two dollars over the regular, metered fare.

Since both companies without special facilities knew of the specially equipped van, they were able to direct passengers that they themselves could not accommodate. Both companies indicated, however, that disabled passengers were accepted whenever possible, at no extra charge, provided the dispatcher was informed of the amount of assistance required, in order to provide a capable driver for the passenger.

2. Automobile Rental Agencies

A random selection of nine automobile rental agencies in Edmonton, Alberta, was requested to complete a questionnaire (see Appendix E) regarding their policy for equipping rental vehicles for physically handicapped clients. Six companies responded, representing a total of 441 to 471 vehicles, depending on the season. Of these six companies, five had branch

offices in other cities, four operated interprovincially and three operated internationally. None of the responding companies provided specially equipped vehicles of any description for physically handicapped clients.

In the May, 1968 issue of Paraplegia News (72; p.7) Hertz Rent-a-Car was reported to have vehicles with hand controls available to the disabled in nine major United States centres: New York City; Washington, D.C; Boston; Detroit; Chicago; Miami; Dallas; Los Angeles; and San Francisco. The number of vehicles available was not disclosed, but advance reservations were recommended. Since Hertz Rent-a-Car was not one of the responding companies, it is uncertain whether this service is provided at the present time in Canada.

3. Long Distance Bus Company

In response to the inquiry pertaining to his company's policy for acceptance of physically disabled passengers, Mr. W. Tytula, Superintendent of Greyhound Bus Lines in Edmonton, Alberta, stated:

> "We reserve the right to refuse to transport any person who is ill or incapable of taking care of himself or herself, unless they are accompanied by an attendant or nurse. The company has absolutely no objection to carrying physically disabled passengers providing they have all the necessary equipment and medication that will be required." (See Appendix G)

No special arrangements or advance notice are required, and no additional fee is charged. However, this company does afford a single fare for a blind person plus his escort.

4. Passenger Ship Company

The company policy of Canadian Pacific Ships, as stated in the questionnaire (see Appendix G), forbids the use of "self-propelled" wheelchairs on board. The company further requests verification from the disabled passenger's physician providing a diagnosis and assessment of the degree of disability. "Each case is considered personally on its merits by the medical advisor."

Trained nurses and "full hospital facilities" are available

throughout the voyage, and a trained nursing staff assists with embarkation and disembarkation, where necessary.

5. Railway Companies

Canadian Pacific Railway policy (see Appendix G) prohibits company employees from lifting physically disabled passengers on or off trains. Should a passenger be unable to entrain and/or detrain with assistance only from his escort he must arrange for and finance fully qualified ambulance attendants to assist him.

Special services provided by this company are: Wheelchairs in all major terminals, posture boards on request, and meals served in private rooms by advance arrangements.

In most instances, fares for the physically disabled and able-bodied correspond. However, special provision is made for blind persons in that they and their escorts receive a twenty per cent reduction in fare when travelling on main lines, as between Vancouver and Montreal, and only pay one regular fare when travelling on branch lines, as maintained between Edmonton and Calgary.

Twenty-four hour notice of special services is requested, to allow time for instruction of crew members and completion of any special arrangements.

In response to the questionnaire (See Appendix G), Canadian National Railways has no official policy regarding physically disabled passengers, but handles requests individually.

Regular fares are employed unless special equipment is required, in which case the company arranges for the equipment and the extra cost is added to the disabled passenger's fare. The example given for "special equipment" was an electrical converter, for use of a respirator in rail cars where available voltage differed from the voltage requirements of the respirator.

Furthermore, those physically disabled passengers requiring assistance with eating, toileting, and/or personal care are obliged to travel with an escort.

The company provides wheelchairs in major terminals and special narrow wheeled chairs on the trains for movement through narrow corridors and doorways.

Seven days advance notice of anticipated special services is requested, but last minute reservations are accepted if possible.

6. Airline Companies

The official policy of Canadian Pacific Airlines with regard to transportation of physically disabled persons states:

> If a passenger, whose status, age or mental or physical condition is such as to involve any hazard or risk to himself is carried, it is on the express condition that the carrier shall not be liable for any injury, illness or death, caused by such status, age or mental or physical condition. (14)

This policy is basic; specific policies concerning various conditions are also in force. On domestic flights, the disabled traveller must be independent regarding his own personal needs, or must be accompanied. On international flights, all disabled passengers must be accompanied by attendants and "...special permission must be obtained by the patient from the authorities of the country of transit". (14) All physically disabled persons travelling with this airline must have an "Incapacitated Passenger Declaration Form T-43" (See Appendix H) completed and signed by their physicians.

Special services include: notification to all participating airlines carrying the person regarding nature of the condition and any special requirements; wheelchairs for transportation to the aircraft; preboarding services; boarding assistance; and oxygen facilities subject to advance notice.

Normal fares apply except in stretcher cases which occupy nine passenger seats. The fare is then three times regular passenger fares.

Although Air Canada did not respond to the survey questionnaire, a copy of their policy with regard to transportation of physically disabled passengers was obtained. (See Appendix I). This policy does not restrict the number of "carry-on" wheelchair passengers, defined as "...passengers who need assistance to the aircraft door due to their inability to ascend stairs, but are capable of walking from the aircraft door to the passenger seat". "Totally incapacitated passengers", defined as, "passengers who are not capable of walking from the aircraft door to the passenger seat and are incapable of self-care in flight", are limited in all aircraft to two per flight segment. Paraplegic passengers are limited to two per flight segment in Viscounts, Vanguards and DC-9's, and to four per flight segment in DC-8's. Further, all passengers categorized as

totally incapacitated or paraplegic must be accompanied by a "fully qualified attendant" on all flights. This policy does not define what constitutes a "fully qualified attendant".

There are two exceptions to the above regulations. Consideration will be given to requests to carry "...paraplegic passengers who are athletes and who travel singly or in groups, usually to attend paraplegic sporting events". In these special cases "...up to approximately double the normal limits for paraplegic passengers" may be carried per flight segment. The other exception is charter flights, where there is no restriction on the number of paraplegic and/or totally incapcitated passengers, provided there is one fully qualified attendant per six such passengers.

In the writer's opinion the policies reviewed above issued by companies offering transportation facilities to the public, are, with few exceptions, quite reasonable and understandable. Instances in which there is unreasonable discrimination or refusal to accept physically disabled travellers are rare and isolated. The basis of every policy and its directives, is the company's indisputable need to protect itself and its employees from liability.

The problems encountered by physically handicapped people seeking to utilize public transportation are resultant from thoughtless practices by vehicle and transportation terminal designers, and not administrative prejudice by company officials.

The disabled are forced to be dependent in the use of public transportation since designers have entirely ignored the needs of this segment of the population. By careful study of these needs and accommodation thereof in new transportation systems and facilities, a vast majority of the disabled could achieve independence in fully utilizing public transportation vehicles. This would greatly reduce, and in many cases eliminate, handling and transferring disabled people by company employees, thus diminishing liability risks and hopefully ameliorating anti-acceptance policies for physically handicapped travellers.

With reference to future public transportation in the United States, H. A. Schweikert, Jr. in his report, Mobility Needs for Physically Impaired Persons, stated: "The Department of Transportation estimates that, if demand continues at its current rate, by year 1980, the total capacity of the transportation system must double what it was in 1967". (101; p.1). Government agencies, private organizations and the physically handicapped themselves must

decide now whether new transportation facilities, in the planning stages, at the present time, will continue to bar the physically disabled from free access to these facilities, which they, as taxpayers, finance and maintain.

Only cursory study shows that the design of public transit buses has completely neglected the needs of the physically disabled. Steps and narrow doors make this mode of transportation entirely unattainable for wheelchair bound people. The steep steps often bar those without the flexibility and supple strength of youth, or those who must wear heavy and restricting leg braces or casts. The narrow aisles and seating arrangements create hazardous and uncomfortable conditions for those wearing casts or braces on lower limbs, since the leg must be protruded into the aisle. The opening mechanism of exit doors is awkward or impossible to manipulate by crutch or cane users or even if the passenger is otherwise dexterous, but is momentarily handicapped by parcels or books.

Since this bus design is used in all populated Canadian areas which offer public transportation, it is obvious that an inordinate number of temporarily and permanently physically handicapped people must rely on other forms of mobility.

Private Transportation

Harold Russell, Chairman of the President's Committee on Employment of the Handicapped (1969) remarked:

> "To the disabled person, the ability to drive can mean the difference between independence and abject dependence. It represents a way to free himself from the confines of his physical limitations, and the limited mobility his impairment imposes upon him. Because of the inaccessibility of public transportation, many disabled persons look upon a car as their sole means of transportation - and their key to earning their way through life". (101; p.10)

Figures indicate that approximately 8,520 disabled Canadian drivers in 1969 (see Appendix J) suffered physical limitations rendering the automobile as their only transportation. The term "disabled drivers" is restricted here to those who require hand controls, a bridged clutch or automatic transmission. The first category includes paraplegics, quadriplegics or bilateral lower limb amputees; the latter includes unilateral lower limb amputees. It is stressed that this total in no way indicates

the number of disabled Canadians who find public transit systems inconvenient, hazardous or entirely inaccessible. This number represents only an estimation of the disabled who have the choice of an alternative.

In Mobility Needs for Physically Impaired Persons Schweikert wrote: "The primary means of transportation for the physically impaired today is the automobile. Anything that affects this means of transport and travel will directly affect the physically impaired". (101; p.29)

Because of public transportation inadequacies regarding accessibility for the physically disabled and the consequent reliance of these people on private transportation it is worth noting a few of the ways in which independence for the disabled drivers may be adversely affected. Physical limitations define the most important factor affecting the disabled person's driving ability. Residual abilities in terms of strength, movement range and co-ordination ultimately decide whether an automobile may be suitably adapted for safe use by the disabled person, and if so, the type of equipment required. Physical limitations, obviously an essential consideration, also dictate the degree of independence in transferring into and out of an automobile.

The writer will not attempt to include herein a complete summary of adapted controls, lifts, ramps, and miscellaneous driving aids manufactured to assist the disabled driver in his quest for total driving independence. It will suffice to note that every disabled person aspiring to this independence is an individual, with unique needs and problems requiring individual solutions.

The seond factor to be considered affecting a disabled driver's driving independence is cost of adaptations. Bray and Cunningham made the following observations: "In the rehabilitation of a partially paralyzed person today, the automobile (or equivalent) may be considered a prosthetic device, just like an artificial limb". (9; p.98) Apparently Canadian federal and provincial governments do not share this view for, although there is provision for braces and prostheses under government medical assistance schemes, no similar allowance is made for driving aids or automobile transfer devices. Neither is allowance made for a wheelchair, although this means of mobility could certainly be legitimately qualified as a prosthetic device. The exhorbitant cost of this equipment must be obsorbed entirely by the disabled person, unless he is eligible for financial assistance. It is the writer's view that many disabled

persons with the physical ability and desire to drive, who might thereby gain employment and social opportunities, are wholly or partially deterred by the high cost of the special equipment required.

The automobile itself constitutes a further financial consideration. Contemporary trends in design very often restrict the automobile market for the disabled. The economical compact car is usually impractical for disabled people, the front seat often too low and the door too small, making transferring difficult to impossible. The back seat and trunk space in compact cars makes loading and transportation of a wheelchair very inconvenient. Bucket seats, now in vogue and rapidly becomming a standard feature in cars, pose additional problems in transferring. Those disabled drivers hoping to be completely independent must be able to load and unload their wheelchairs once in the driver's seat. This generally restricts the type of car to a two-door model wherein the seat back release mechanism is located conveniently for the driver as he sits behind the steering wheel. With few exceptions, disabled drivers are also restricted to cars with automatic transmissions and many prefer or require power steering and power brakes. These features - a spacious, two-door car, with a straight seat closely approximating the height of the wheelchair seat, automatic transmission, and power equipment - are "extras" to a car dealer, and as such necessitate a disabled driver's paying much more for an automobile than many able-bodied people ordinarily pay. These needs in automotive design do restrict the number of disabled drivers who can afford to drive.

Training and licencing are other factors which may affect the disabled driver. Normally, discrimination in licencing disabled driver applicants does not occur. Although each of the Canadian provinces and territories has its own laws governing driver licencing, the Alberta laws are probably quite indicative of the licencing practices elsewhere in Canada. According to Mr. A. D. MacDonald, Assistant Chief Examiner for the Northern Area of the Alberta Department of Highways Motor Vehicles Branch (59), disabled drivers in Alberta are not given special classification. They are judged individually on their ability to pass a written and road test in a car adapted to their specific abilities. Disabled drivers require medical certification only if their debilitating condition is progressive. Progressive conditions also necessitate retesting prior to licence renewal every one to five years.

The Alberta Motor Vehicles Branch does not provide driver

training, but will advise disabled applicants on special equipment or adaptations necessary and where this equipment may be obtained and installed.

It is evident that driver licencing policies are not unnecessarily detrimental to disabled people seeking independence in mobility. A more serious problem arises in the dirth of driver training facilities for disabled people, since most regular driver training schools show little or no interest in accommodating physically handicapped clients. This is quite understandable as the cost of special equipment suited to the needs of all disability types plus provision of specially trained teachers for qualified instruction and authoritative assessment of the equipment necessary would be prohibitive. This, however, does not decrease the need of driver instruction and knowledgable assistance in choosing proper equipment for those disabled who wish to drive.

Some rehabilitation units in the larger Canadian cities have incorporated driver training courses into their programs, and have made these facilities available to noninstitutionalized handicapped people, as well as active treatment patients.

"Progress" also affects disabled drivers. In the 1959-1969 period, Canada has experienced a two and one-half million increase in registered passenger vehicles, with the latter years of this period showing the greatest increase (30; p.11). Highway and street construction, especially in business districts, has not kept pace with the staggering automotive onslaught. As a result, tiered parking has been employed away from business centres, thus forcing a disabled party to maneuver long distances and dangerous curbs between his auto and destination. Handicapped driver independence is again threatened should there be no elevator to the upper levels of parking, or an absence of reserved, wider stalls for disabled drivers on the main floor.

Although seemingly unrelated to the topic, air pollution poses a barrier to the disabled driver. Plans are progressing in many congested centres to forbid private vehicular traffic within a certain radius of the business districts. Within these boundaries, all commuters will use public transportation, the inaccessibility of which has been discussed previously.

It is evident, then, that transportation problems for the handicapped has reached its climax. All citizens, organizations, governments, must initiate action against this discrimination lest disabled people be deprived of their fifth constitutional right - the freedom of mobility.

CHAPTER VII

RECOMMENDATIONS

From the evidence presented, it is obvious that stronger, more unified action on the problems of architectural barriers is imperative. It is recommended that a government affiliated co-ordinating authority be established to administer soley to this and associated problems. This organization should include representatives from all fields associated with this problem. It should exist at all governmental levels, and it should have the following functions:

1. to undertake research to develop improved revised standards. This research should delve into housing, transportation, education, recreation and employment needs of the physically impaired, and compile and demonstrate specific standards and cost schedules in each area. The aim of this research should be to provide accurate and detailed data, as opposed to the present conflicting information from various sources.

2. to conduct cost studies outlining feasibility and financial basis for elimination of architectural barriers.

3. to enumerate and assess the needs of all physically disabled in Canada according to type and degree of disability.

4. to act as a central and organized source of information on this subject; to process and distribute "barrier-free" information; to promote the accessible construction and transportation concept.

5. to promote awareness of architectural barriers and to educate the public on the architectural needs of the physically disabled through utilization of mass media.

6. to counsel individuals and organizations on accessibility features.

7. to offer services of knowledgeable staff to assess existing structures and recommend modifications.

8. to organize committees to study, develop and affect solutions to the specific problems.

9. to enforce uniform interpretation and application of legislation.

10. to make rulings on applications which request exemption from mandatory accessibility standards.

11. to initiate and execute a system of universal "sign-posting" or accessible features. *

*

(An International Symbol of Access has been adopted by the International Society for Rehabilitation for the Disabled and its 62 member countries.

This symbol, displayed on a building, indicates to handicapped persons that they will have reasonable freedom of movement within that building. An arrowhead can be added to either side of the symbol to indicate direction or the location of an accessible ground level entrance.

This symbol can also be used to notify handicapped persons that restroom and other facilities that are so marked have been made accessible to them and to indicate their location.

The background (shown on page 41 as black) is blue in the actual symbol. Where the blue colour will not be clear when the sign is in position, because of lighting conditions, for example, the sign can be centred on a white background made from self-adhesive decorator vinyl covering which adheres to glass and is waterproof.

Additional information on the availability and use of this international symbol can be obtained from: The Canadian Rehabilitation Council for the Disabled, 242 St. George Street, Toronto, Ontario, M5R 2N5.

Those who wish to make their premises accessible to the physically handicapped are referred to "Building Standards for the Handicapped 1970" issued by the Associate Committee on the National Building Code of Canada. Copies can be ordered from the Secretary of the Committee; Order No. NRCC 11430; Price 25 cents.)

The legislation upon which the aforementioned committee will act should include such fundamental provisions as:

1. all accessibility features required and recommended in Supplement No 5 of the National Building Code to be made mandatory for all future public buildings and transportation, unless justification can be given for exemption.

2. amendments to the Civil Rights Act to include the physically handicapped.

3. financial incentive by way of low interest loans and tax deductions for individuals and organizations voluntarily agreeing to modify existing facilities.

4. financial incentive to investors for inclusion of special units in housing of all types.

5. provision for trial projects and research in future housing developments with consideration for the disabled.

6. establishment of curriculum standards enforcing the study of architectural barriers in Canadian schools of architecture.

7. provision of special feature homes to encourage earlier discharge of institutionalized handicapped.

8. organization of driver training programs for inclusion in programs for all major rehabilitation centres; including training, equipment assessment and instructor training.

9. study and revision of existing financial assistance and tax deductions for the physically disabled, to include deductions by the handicapped person or his spouse/guardian for special expenses incurred by the handicapped.

10. provision of privileged movement and parking for the disabled within restricted business areas until public transportation eliminates existing barriers.

The foregoing are recommendations and suggestions of methods to aid elimination of architectural barriers. It is earnestly believed that these recommendations are realistic and attainable.

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APPENDIX A

SURVEY OF SCHOOLS OF ARCHITECTURE

February 3, 1971

NOTE: In this survey, the term "physically disabled" refers to those individuals who are wheelchair-bound, require assistance with ambulation, have cardiac or respiratory disabilities, or are deaf, blind, or elderly.

1. What is the annual enrolment of students in your school of architecture? _____

2. Do architecture students in your school have any orientation to the problem of architectural barriers to the physically disabled?

   Yes_____ No_____

3. What form does this orientation take? single lecture_____
   series of lectures_____number_____
   half course (1 semester)_____
   full course (2 semesters)_____
   other_____

4. If a course is offered,does it provide credit toward a degree?
   Yes_____ No_____

5. Are the lectures/courses compulsory? Yes_____ No_____
   (a) for all students_____
   (b) for students in some diciplines_____

6. If compulsory for some disciplines, please specify which ones.

   _____

   _____

7. What texts or other materials (pamphlets, films, etc.) accompany the lectures?

   _____

   _____

8. Please give a brief resume of the topics discussed in the lectures/courses (e.g. design specifications, domestic housing, etc.)

   _____

   _____

   _____

   _____

9. Does the professor lecturing in this series/course have any special training and/or experience in the area of architectural barriers to the physically disabled?

   Yes_____ No_____

   If yes, please describe briefly.

   _____

   _____

   _____

10. Do you know of any legislation in your city and province that is concerned with the elimination of architectural barriers to the physically disabled?

    Yes_____ No_____

    Please describe briefly.

    _____

    _____

    _____

NOTE: If an orientation to architectural barriers to the physically disabled is NOT a part of your curriculum, please respond to the following questions:

11. Have you ever been approached before about this aspect of architecture?

    Yes_____ No_____

12. If it was an organization that previously approached you, please specify which organization.

    _____

13. Have you, as an individual, been made aware of the barriers which architectural design presents to the physically disabled?

    Yes_____ No_____

    How?_____

    _____

14. Has your School of Architecture ever considered incorporating a course or series of lectures on architectural barriers to the physically disabled into the curriculum?

Yes_____ No_____

Why was this proposal rejected?_____

_____

_____

_____

_____

_____

15. Do you feel that all architecture students should have some orientation into the problems of architectural barriers to the physically handicapped?

Yes_____ No_____

* * * * * * * * * * * * * * * * * * * *

16. Has a survey ever been done on the accessibility of the buildings on your university campus?

Yes_____ No_____

If yes, have any reports of the survey been published?

Yes_____ No_____

17. If the results of the survey have been published, where may these results be obtained?

_____

_____

_____

_____

Additional Remarks:

_____

_____

_____

_____

_____

_____

_____
(signature)

Thank you for your co-operation in participating in this survey.

Sincerely,

Mrs. K. J. Kirkland, O.T.R.

APPENDIX A

Surveyed Schools of Architecture: (*responded to survey)

1. Acadia University,
   Wolfville, Nova Scotia
   (forwarded survey to Nova Scotia Technical School)

* 2. University of British Columbia,
   Vancouver, British Columbia.

3. Carleton University,
   Ottawa, Ontario.

* 4. Dalhousie University,
   Halifax, Nova Scotia,
   (forwarded survey to Nova Scotia Technical School).

* 5. Laval University,
   Quebec City, Quebec.

* 6. University of Manitoba,
   Winnipeg, Manitoba.

7. McGill University,
   Montreal, Quebec.

* 8. University of Montreal,
   Montreal, Quebec.

N/A - no answer

APPENDIX A

	U. of B.C.	N.S.T.C.	LAVAL	U. of MAN.	U. of MONTREAL
1. Annual enrolment	no survey	100	170	320	300
2. Orientation - form - credit - compulsory	"	Not at present. Incorporated into some design programs.	Yes. Single Lecture. Credit n/a. Not Compul.	Yes. "General reference in design	No. Investigating possibility
3. Supplemental Materials Used	"	Publications - Canadian Rehabilitation Council for Disabled and British Ministry of Housing	Film	n/a	n/a
4. Topics discussed	"	Special physical, social, economic problems of aged. Design standards for physically disabled	Problems for disabled by architectural barriers	n/a	n/a
5. Experience/Training of Professor in this Field	"	none	Wheelchair bound	None required by school	n/a
6. Knowledge of Legislation	"	no	no	no	n/a
7. Previously Approached re Architectural Barriers - Organizations	"	Yes. Canadian Rehabilitation Council for the Disabled	n/a	Yes. n/a	n/a
8. Personal Awareness of Design Requirements of Physically Disabled	"	Yes. Attention in Britian to matter. Publicity of Goldsmith's book	n/a	Yes. Professional journals & approached by paraplegic assn.	n/a
9. Consideration for Course on Architectural Barriers - Reason for rejection	"	no	n/a	no	n/a
10. Need for Orientation	"	Do not know	n/a	yes	n/a
11. Knowledge of Accessibility Survey	"	Not within last two years	n/a	Survey done; unknown if published	n/a

APPENDIX B

TABLE 43. Revenue Fund Expense per A and C Patient-day, 1968

TABLEAU 43. Dépenses du fonds d'administration générale, par journée d'hospitalisation (A. et E.), 1968

Category, type of hospital and size — Catégorie, affectation et taille des hôpitaux	Nfld. — T.-N.	P.E.I. — Î. P.-É.	N.S. — N.-É.	N.B.	Qué.	Ont.	Man.	Sask.	Alta. — Alb.	B.C. — C.-B.	Yukon	N.W.T. — T. N.-O.	Canada
Public – Publics (hospitals reporting – hôpitaux répondants)	**36**	**9**	**47**	**40**	**177**	**210**	**81**	**140**	**142**	**99**	**2**	**6**	**989**
Mean – Moyenne						dollars							
General – Généraux:													
1 - 9 beds – lits	–	–	37.42	22.53	34.01	–	31.92	32.76	45.88	70.86	–	–	33.74
10 - 24 " "	49.73	23.13	30.87	32.41	44.98	42.39	29.71	27.74	30.89	33.39	89.87	43.74	32.50
25 - 49 " "	39.51	22.56	32.29	34.08	37.51	38.06	30.86	28.32	33.78	35.32	–	35.10	34.18
50 - 99 " "	37.87	27.15	35.85	38.88	46.64	37.53	31.68	35.01	33.20	37.37	–	–	37.30
100 - 199 " "	43.71	33.75	42.24	37.69	48.21	42.15	35.71	38.63	43.24	37.18	–	–	42.56
200 - 299 " "	45.56	34.20	34.47	43.47	51.83	47.67	52.73	38.44	43.23	38.66	–	–	46.62
300 - 499 " "	52.47	–	54.77	42.11	55.30	46.38	43.49	42.61	46.66	48.10	–	–	49.14
500 - 999 " "	–	–	73.42	40.12	63.62	60.04	51.19	54.31	47.15	50.45	–	–	58.19
1,000+ " "	–	–	–	–	73.43	56.40	–	–	56.62	52.22	–	–	59.31
All general – Tous généraux	46.49	31.65	44.81	39.63	56.31	49.94	42.32	38.62	42.97	42.84	89.87	36.36	48.44
First quartile (Q_1) – 1er quartile	*36.32*	...	*30.68*	*32.07*	*40.81*	*37.28*	*26.71*	*25.54*	*29.35*	*33.99*	...	...	*31.10*
Median – Médiane	*46.03*	...	*36.13*	*37.53*	*48.01*	*42.74*	*30.49*	*29.83*	*35.00*	*37.02*	...	...	*37.51*
Third quartile (Q_3) – 3e quartile	*53.50*	...	*38.98*	*40.97*	*57.43*	*47.55*	*34.35*	*35.72*	*39.82*	*40.05*	...	...	*45.43*
Mean – Moyenne:													
Chron. – Conv. – Réhab.	15.67	31.05	35.70	25.51	20.92	23.08	27.66	–	18.02	21.70	–	–	21.67
Other – Autres	–	–	61.75	–	57.49	119.38	–	–	43.64	77.89	–	–	69.17
All public – Tous publics	44.87	31.62	44.97	39.20	49.82	46.95	39.89	38.62	36.85	40.98	89.87	36.36	45.01

TABLE 44. Revenue Fund Expense per Available Bed-day, 1968

TABLEAU 44. Dépenses du fonds d'administration générale, par jour-lit disponible, 1968

Category, type of hospital and size — Catégorie, affectation et taille des hôpitaux	Nfld. — T.-N.	P.E.I. — Î. P.-É.	N.S. — N.-É.	N.B.	Qué.	Ont.	Man.	Sask.	Alta. — Alb.	B.C. — C.-B.	Yukon	N.W.T. — T. N.-O.	Canada
Public – Publics (hospitals reporting – hôpitaux répondants)	**36**	**9**	**47**	**40**	**177**	**210**	**81**	**142**	**142**	**99**	**2**	**6**	**991**
Mean – Moyenne:						dollars							
General – Généraux:													
1 - 9 beds – lits	–	–	24.21	27.57	31.87	–	23.86	21.66	27.62	18.39	–	–	23.84
10 - 24 " "	41.57	14.78	24.40	20.29	30.80	31.75	22.13	20.16	19.78	22.31	22.46	29.04	23.25
25 - 49 " "	28.11	22.41	26.96	28.95	28.76	28.95	23.11	20.83	22.33	26.66	–	16.36	24.87
50 - 99 " "	28.46	14.25	25.59	29.95	36.55	31.38	23.9[illegible]	24.79	22.75	30.36	–		28.66
100 - 199 " "	27.79	24.92	30.49	31.27	36.78	33.68	29.82	28.29	31.06	30.35	–	–	32.94
200 - 299 " "	33.90	20.28	26.22	36.25	38.46	39.72	44.16	28.44	30.27	34.25	–	–	37.02
300 - 499 " "	47.08	–	42.36	38.01	43.69	38.32	37.05	36.20	34.61	43.90	–	–	40.50
500 - 999 " "	–	–	70.97	31.93	50.11	49.50	44.45	41.95	36.94	46.95	–	–	47.34
1,000+ " "	–	–	–	–	64.16	47.17	–	–	45.00	47.76	–	–	50.62
All general – Tous généraux	35.56	21.89	34.49	32.55	43.92	41.11	34.47	29.20	31.34	36.64	22.46	17.72	38.62
First quartile (Q_1) – 1er quartile	*27.40*	...	*23.12*	*24.66*	*28.39*	*29.37*	*20.14*	*18.29*	*19.38*	*23.05*	...	.	*21.76*
Median – Médiane	*30.53*	...	*25.13*	*29.55*	*36.81*	*33.09*	*22.74*	*21.10*	*22.31*	*28.81*	...	..	*27.47*
Third quartile (Q_3) – 3e quartile	*39.99*	...	*29.60*	*32.86*	*45.32*	*39.35*	*25.82*	*24.81*	*26.14*	*33.37*	...	..	*34.75*
Mean – Moyenne:													
Chron. – Conv. – Réhab.	13.45	20.87	33.08	24.16	19.69	22.42	26.16	–	16.03	18.59	–	–	20.24
Other – Autres	–	–	38.19	–	37.66	95.79	–	–	26.74	67.50	–	–	47.50
All public – Tous publics	34.52	21.84	34.56	32.32	39.91	39.40	33.25	29.20	28.08	35.06	22.46	17.7	36.55

APPENDIX C

Public Law 90-480
90th Congress, S. 222
August 12, 1968

An Act

To insure that certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, as used in this Act, the term "building" means any building or facility (other than (A) a privately owned residential structure and (B) any building or facility on a military installation designed and constructed primarily for use by able bodied military personnel) the intended use for which either will require that such building or facility be accessible to the public, or may result in the employment or residence therein of physically handicapped persons, which building or facility is— Public buildings. Accessibility to physically handicapped.

82 STAT. 718

82 STAT. 719

(1) to be constructed or altered by or on behalf of the United States;

(2) to be leased in whole or in part by the United States after the date of enactment of this Act after construction or alteration in accordance with plans and specifications of the United States; or

(3) to be financed in whole or in part by a grant or a loan made by the United States after the date of enactment of this Act if such building or facility is subject to standards for design, construction, or alteration issued under authority of the law authorizing such grant or loan.

SEC. 2. The Administrator of General Services, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings (other than residential structures subject to this Act and buildings, structures, and facilities of the Department of Defense subject to this Act) as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings. Standards.

SEC. 3. The Secretary of Housing and Urban Development, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings which are residential structures subject to this Act as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

SEC. 4. The Secretary of Defense, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings, structures, and facilities of the Department of Defense subject to this Act as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

SEC. 5. Every building designed, constructed, or altered after the effective date of a standard issued under this Act which is applicable to such building, shall be designed, constructed, or altered in accordance with such standard. Applicability.

SEC. 6. The Administrator of General Services, with respect to standards issued under section 2 of this Act, and the Secretary of Housing and Urban Development, with respect to standards issued under section 3 of this Act, and the Secretary of Defense with respect to standards issued under section 4 of this Act, is authorized—

(1) to modify or waive any such standard, on a case-by-case basis, upon application made by the head of the department, agency, or instrumentality of the United States concerned, and upon a determination by the Administrator or Secretary, as the case may be, that such modification or waiver is clearly necessary, and Waiver.

(2) to conduct such surveys and investigations as he deems necessary to insure compliance with such standards. Surveys and investigations.

Approved August 12, 1968.

HOUSE REPORTS: No. 1532 accompanying H. R. 6589 (Comm. on Public Works) and No. 1787 (Comm. of Conference).
SENATE REPORT No. 538 (Comm. on Public Works).
CONGRESSIONAL RECORD:
Vol. 113 (1967): Aug. 25, considered and passed Senate.
Vol. 114 (1968): June 17, considered and passed House, amended, in lieu of H. R. 6589.
July 26, House agreed to conference report.
July 29, Senate agreed to conference report.

late Sir William Mulock or some other of minister's predecessors may be fun, but it is hardly an explanation of this very serious and expensive problem.

Hon. Eric W. Kierans (Postmaster General and Minister of Communications): Mr. Speaker, it is very refreshing indeed to hear the hon. member say that he would like to really know what the facts are, what has been going on, and that he would like an inquiry. Having made so many speeches over the course of the last few months, I thought he knew all the facts of this matter, or what else could he have been talking about? Since he seems to have made me his pet hobby, even to following my appearance on television, I think the hon. member will realize that I do acknowledge his sincerity and his interest by always making myself available to reply to his demands for information.

With respect to the trucks, Mr. Speaker, they were bought for two reasons. First, the Goldenberg report required that we cancel, without cause, the contracts that had been given to the independent contractors. Obviously, when it was done "without cause" we had an obligation to them unless we wanted them to take us to court and suffer that particular kind of humiliation. So we carried out that aspect of the Goldenberg report and purchased the vehicles, 138 of them brand new. We paid for them a total of $514,688.

I now speak with respect to Lapalme. We gave them a one-year contract, on the basis that it would be for one year only. Therefore, we had to assume one of two possible courses of action. We had either to strike off the charge for the trucks entirely in the course of that one-year's operation, or we could undertake to buy them back at Lapalme's invoice cost, less 30 per cent depreciation which we had permitted him to charge for the year. The balance would accrue to us. As of today there were 441 vehicles, not 439, disposed of or accounted for. Our information is more complete now. Of these, 206 are in Montreal, 81 have been sent to Vancouver, one has been sent to Pickering, Ontario, 48 Lapalme vehicles—which are probably the scruffiest of the lot—have been declared surplus at a cost of some $10,000, and there will be some recovery there. Another 17 are not needed and will be resold, and 88 will be available for national fleet requirements.

In addition, Montreal will need 32, Vancouver 12, Windsor 3, Quebec City 1, Saint John, New Brunswick, 1, Mississauga 5, Pointe Claire 10 and Lachine 7. We are saving on the operation an annual cost of $2 million a year.

Mr. Speaker: Order, please.

PUBLIC BUILDINGS—ACCESS FOR HANDICAPPED PERSONS—MEETING OF APPROVED STANDARDS

Mr. Randolph Harding (Kootenay West): Mr. Speaker, earlier today I asked the Minister of Public Works (Mr. Laing) the following question: "In view of the need of our handicapped citizens, especially those confined to wheelchairs, to have proper access both to all our public buildings and to their facilities, I would ask if all federal public buildings specifications could include those standards which have been approved in the National Building Code under their supplement No. 7 entitled 'Building Standards for the Handicapped' ". In view of the need for our handicapped citizens, especially those confined to wheelchairs, to have easy access to all federal public buildings and their facilities, I would ask the minister if the building specifications for federal public buildings include the recommendations outlined in the National Building Code—Supplement No. 7 entitled, "Building Standards for the Handicapped".

I welcome this opportunity to expand briefly on the need for standards for public buildings of the future to make them accessible to handicapped people. At present many of our public buildings in the federal, provincial, municipal and private fields make absolutely no provision for easy and adequate access to our handicapped citizens; nor are any of the facilities within these structures designed to accommodate the needs of handicapped people. It is a fact that many of our handicapped citizens are fully self-supporting. Many more have the skills and the determination to live a fuller and more productive life but find that a number of society-made obstacles, which could easily be prevented, often stand in their way. It is for this reason that I have asked if the building specifications for all federal public buildings could insist on certain mandatory regulations which would give our handicapped citizens the proper access to and the use of the facilities of our public buildings, to which use they are fully entitled.

The State of Pennsylvania, for example, prohibits the construction of public buildings without provision for easy access by disabled people. Our federal government should pass similar legislation and should urge the ten

APPENDIX D

...n provinces and the municipalities to include this provision in all their building codes. I point out that we have a National Building Code of Canada. It does not contain those provisions which would provide the needed access and facilities so urgently required by our handicapped citizens.

There is Supplement No. 7 to the National Building Code called "Building Standards for the Handicapped". However, to date I understand that the federal government has not made these building standards mandatory even in the construction of federal public buildings. In my opinion, this is something that the minister and the government should look into without delay. Our federal government should give leadership in this field by prohibiting the construction of its own public buildings unless there is provision for easy access by disabled people. I am certain that if the provisions were strictly adhered to on a federal basis, it would not be long before other jurisdictions accepted similar changes to their legislation.

The lack of proper facilities in all parts of the country has caused great frustration to the handicapped people in their efforts to lead useful and active lives. As a result, several years ago representations were made to government authorities by the various handicapped groups across Canada. It resulted in the development of Supplement No. 7, "Building Standards for the Handicapped." But again I must stress that it was not made mandatory. It is merely a written guide for those interested in the design and construction of buildings, with provisions for making them usable by the physically handicapped.

• (10:20 p.m.)

Society and government should be concerned about this problem. The changes required in substance could easily be incorporated into any architectural plans. These special provisions would in no way detract from the normal use of the building or facilities by those who are not handicapped. In fact, it has been pointed out that many buildings would be more accessible and would be safer for all who use them, particularly for the handicapped and the aged. In addition, such freedom of access would allow a fuller and more productive life for this particular group of citizens.

It would be a simple task to incorporate the changes required in almost any public building. At least one primary entrance to each building should be usable by persons in wheelchairs. Walks should have non-slip surfaces. Doors and doorways should be wide enough for easy passage and should be simple to operate with a minimum of effort. A slow-closing gadget would allow uninterrupted passage of a wheelchair. Even a slight change in some of the lavatories would make them easily available to occupants of wheelchairs. There are many small changes that would make a world of difference to our handicapped citizens, but time does not permit me to list them.

There is no doubt that governments generally have overlooked this grave social problem. I trust that we will do much more to try and solve the many problems faced by our handicapped citizens. It is my intention to do what I can to keep this problem before the government and to work toward a solution. It is the duty of every member to speak on these problems and to help bring about a solution. I trust that some changes in our federal building program will be the start of a new era for our many handicapped citizens.

Hon. Arthur Laing (Minister of Public Works): Mr. Speaker, I am sure that hon. members will be gratified by the action of the hon. member for Kootenay West (Mr. Harding) in bringing to the attention of the House the need for providing for handicapped persons proper facilities in our public buildings, particularly those in wheelchairs. However, I am going to come into some conflict with the hon. member. I have here a copy of Supplement No. 7 of the National Building Code of Canada. It states:

> The following mandatory requirements constitute the minimum standards for projects for the Department of Public Works:—

The hon. member is saying that this is not mandatory. The information I have received is that it is mandatory. The provisions with respect to entrances are:

> Provide one primary entrance to each building usable by persons in wheelchairs. Where elevators are provided, locate this entrance on a level served by the elevator.

Another provision is as follows:

> Doors and Doorways: Provide doorways with a clear opening of at least 2'6" (including hardware) when open.

There are also provisions for vestibules, ramps, handrails, elevators, floors and washrooms. I have attended a number of openings of public buildings in the last several months. In all instances there are provisions along the

APPENDIX D

[illegible]dicated in Supplement No. 7. I am not prepared to say whether this is a recent practice.

I am a citizen of Vancouver. If I were asked where the entrance for people in wheelchairs is at the Winch Building or the old Post Office building, I could not tell you. This is only because I have never entered those buildings in a wheelchair. However, in some of our older buildings and in some public buildings in smaller towns, there are probably no provisions.

This is a costly provision, as the hon. member will understand, in respect of rent and in respect of requirements in the various parts of the buildings. There may well be, in some of these smaller towns, no need for this type of provision. If this were known, it would not be included in the requirements for such a building. I want to reassure the hon. member that at the present time I am informed by my people that the requirements here, a copy of which I will give to him afterward, are mandatory within the contracts granted by the Department of Public Works.

Motion agreed to and the House adjourned at 10.29 p.m.

APPENDIX E

TRANSPORTATION FOR THE PHYSICALLY DISABLED SURVEY

February 12, 1971

NOTE: The term "Physically Disabled" here refers to those individuals who are wheelchair-bound, require assistance with ambulation, have cardiac or respiratory disabilities, or are blind, deaf or elderly.

1. How many vehicles does your company operate? _____

2. What per centage of the vehicles are: a) company owned? _____
   b) driver owned? _____

3. Does this company operate: city wide? yes_____
   no_____

4. Does this company operate:
   - in other cities? (specify) _____
   _____
   - in other provinces? (specify) _____
   _____
   - in other countries? (specify) _____
   _____

5. What is your company's official policy with regard to providing transportation to the physically disabled, as defined above?

_____

_____

_____

_____

APPENDIX E

6. Is this policy city-wide, province wide, nation wide, or world wide for your company?_____

7. Do you charge an additional fee for providing service to the physically disabled? Yes_____ No _____

   If yes, how much is this additional fee? _____

8. What special facilities, if any, do you provide for the physically disabled (e.g. Specially equipped vans, ramps, etc.)?

   _____

   _____

   If special vans are available, how many do you have in your fleet?

   _____

9. What hours are these services available?_____

10. What special arrangements, if any, must be made with your company prior to acceptance of a disabled passenger?

    _____

    _____

    _____

    _____

11. How much advance notice must be given by a disabled person before transportation is provided?_____

    _____

12. If your company DOES NOT provide transportation for disabled people could you inform them of where they might receive such a service?

    Yes_____ No_____

    Where?_____

    _____

APPENDIX E

ADDITIONAL REMAKRS:

_____

_____

_____

_____

_____

_____
(signature)

_____
(company)

I am most grateful for your co-operation in participating in this survey.

Sincerely,

Mrs. K. J. Kirkland, (O.T.Reg.)

APPENDIX E

Surveyed Taxi Companies, Edmonton, Alberta (*responded to survey)

* 1. Barrel Taxi
* 2. City Cab Co. Ltd.
3. Golden Cabs Ltd.
* 4. Yellow Cabs Ltd.
5. Calder Cabs
6. Checker Taxicab Ltd.
7. St. Albert Cabs Ltd.
8. Sherwood Park Taxi.
9. Towne Taxi Ltd.

N/A - no answer

APPENDIX E

	BARREL TAXI LTD.	CITY CAB CO. LTD.	YELLOW CAB LTD.
Number of Vehicles - company owned - driver owned	50 none 50	170 n/a n/a	354 35% 65%
Area of Operation - city wide - in other cities - in other provinces - in other countries	city wide	city wide	city wide
Company policy for transporting physically disabled	"we do our best with the facilities we have"	"whereever possible we provide taxi service only"	provide specially equipped wheelchair van
Additional fee	no	no	Yes. $2.00 over meter
Provision of special facilities	"just understanding"	no	1 van with ramp and wheelchair
Hours of service	24 hours	24 hours	24 hours
Special arrangement prior to acceptance of physcially disabled passenger	inform dispatcher so that capable driver may be sent	inform dispatcher of amount of assistance required	24 hour advance notice
Advance notice required	none	minimum of one-half hour	see above
Knowledge of special facilities elsewhere	yes - Yellow Cab	Yes - Yellow Cab	n/a

APPENDIX F

TRANSPORTATION FOR THE PHYSICALLY DISABLED SURVEY

February 12, 1971

NOTE: The term "physically disabled" here refers to those individuals who are wheel-chair bound, require assistance with ambulation, have cardiac or respiratory disabilities, or are blind, deaf, or elderly.

1. How many cars do you have available for rent at your branch?_____

2. Does this company have branch offices:

   - in other cities? (specify) _____

     _____

   - in other provinces? (specify) _____

     _____

   - in other countries? (specify) _____

     _____

3. What is your company's official policy with regard to providing automobile rental services to the physically disabled, as defined above?_____

   _____

   _____

   _____

4. Do you charge an additional fee for providing service to the physically disabled? yes _____ no _____

   If yes, how much is this additional fee?_____

   Why are these additional fees assigned? (eg. basic rate, insurance etc.)_____

   _____

APPENDIX F

5. What special services or equipment do you provide for the physically disabled? (eg. types of special controls available, pick-up and delivery service, out-of-town reservations, etc.)

_____

_____

6. How many specially equipped cars do you have?_____

7. What special arrangements, if any, must be made with your company prior to rental? (eg. medical certificate, etc.)

_____

_____

8. How much advance notice must be given by a disabled driver prior to rental?_____

9. If you DO NOT provide this service for disabled people, could you inform them of where they might receive such a service?

   Yes _____ No _____

   Where?_____

ADDITIONAL REMARKS?

_____

_____

_____

_____
(signature)

_____
(company)

I am most grateful for your co-operation in participating in this survey.

Sincerely,

Mrs. K. J. Kirkland, (O.T. Reg.)

APPENDIX F

Surveyed Automobile Rental Agencies, Edmonton, Alberta:
(* responded to survey)

* 1. Host Rent-a-Car.
* 2. Airways Rent-a-Car.
* 3. Budget Rent-a-Car.
* 4. Avis Rent-a-Car.
* 5. Edmonton Rent-a-Car.
* 6. No. 1 Rent-a-Car.
  7. Hertz Rent-a-Car, Canada.
  8. Tilden Rent-a-Car.
  9. Car Leasing (Alberta) Ltd.

N/A - no answer

APPENDIX F

	AIRWAYS RENT-A-CAR	AVIS RENT-A-CAR	BUDGET RENT-A-CAR	EDMONTON RENT-A-CAR	HOST RENT-A-CAR	NO. I RENT-A-CAR
Number of Cars	60-90	90	120	40	31	100
Branch Offices: - other cities - other provinces - other countries	 yes yes yes	 yes yes yes	 yes yes yes	 no no no	 yes yes no	 yes yes no
Company policy re provision of rental services to physically disabled	valid licence & capable of operating a non-adapted vehicle	Valid licence & capable of operating a non-adapted vehicle	Valid licence, employed, mature, responsible citizen	No provision of rental service to physically disabled	"no official policy - each franchise free to make own policy in this regard	"unable to supply"
Additional fee	no	no	no	n/a	no	n/a
Special services for equipment for physically disabled	no	no	no	no	no	no
Number of specially equipped cars	none	none	n/a	none	none	none
Arrangements prior to rental	none	none	"qualification of customer	n/a	n/a	n/a
Advance notice required	n/a	no	1-2 days	n/a	n/a	n/a
Knowledge of other auto rental agencies providing for physically disabled	Yellow Cab - no rent-a-car companies	no	n/a	no	no	no

APPENDIX G

TRANSPORTATION FOR THE PHYSICALLY DISABLED QUESTIONNAIRE

February 3, 1971.

NOTE: The term "physically disabled" here refers to those individuals who are wheelchair-bound, require assistance with ambulation, have cardiac or respiratory disabilities, or are blind, deaf, or elderly.

1. What is your company's official policy with regard to providing transportation for the physically disabled, as defined above?

_____

_____

_____

_____

_____

2. Do you charge an additional fee for providing service to the physically disabled? Yes_____ No _____

If yes, how much is this additional fee? _____

3. What special facilities, if any, do you provide for the physically disabled?_____

_____

_____

_____

APPENDIX G

4. What special arrangements, if any, must be made with your company prior to departure?

_____

_____

_____

5. How much advance notice must be given by a disabled individual prior to departure?

_____

_____

Additional Remarks:

_____

_____

_____

_____
(signature)

I am most grateful for your co-operation in participating in this survey.

Sincerely,

Mrs. K. J. Kirkland, (O.T. Reg.)

APPENDIX G

Bus, Ship, Rail, and Air Transportation Companies Surveyed:
(* responded to survey)

* 1. Greyhound Bus Lines.
* 2. Canadian Pacific Ships.
* 3. Canadian Pacific Railway.
* 4. Canadian National Railway.
* 5. Canadian Pacific Airlines.
  6. Air Canada.

APPENDIX G

	GREYHOUND BUS LINES	CANADIAN PACIFIC SHIPS	CANADIAN PACIFIC RAILWAY	CANADIAN NATIONAL RAILWAY	CANADIAN PACIFIC AIRLINES
Official company policy re: transportation of physically disabled people	"We reserve the right to refuse to transport any person who is ill or incapable of taking care of herself or himself unless they are accompanied by an attendant or nurse."	"Each case is considered personally on its merits by the medical advisor." Prohibit self-propelled wheelchairs on board. Carry physically disabled if facilities adequate	Employees cannot lift passengers on and off trains - passenger must supply own chair	No official stated policy. Requests handled individually.	Carried if: -ailment not infectious -has properly completed Form T-43 -condition acceptable to authority of country of transit
Additional fee	No.	No.	No.	No except where special equipment required	No except stretcher cases - three times regular fare
Special Facilities provided	Blind & escort on single fare - Special attention to those with wheelchairs, etc.	Full hospital facilities; trained nursing staff; free wheelchairs	Special rates for blind; wheelchair service in major stations; posture boards available; room service for meals by prearrangement	Wheelchairs in major terminals. Special narrow chairs for movement on board - will arrange for special equipment at traveller's expense	First aid, theraputic oxygen by prearrangement; wheelchairs from checkin to departure area
Special arrangements required by physically disabled	None.	Prefer physician diagnosis and assessment of degree of disability	Advance notice of requirements	Information re: nature of disability plus special requirements	Completion of Incapacitated Passenger Declaration Form (T-43) - attendandant for <u>all</u> international & domestic flights if unable to care for self
Advance Notice	None.	"As much as possible"	Minimum of 24 hours	7 days	Minimum of 24 hours

APPENDIX H

Incapacitated Passenger Declaration

CP Air

This form is to be completed in triplicate by attending physician and patient or person legally authorized to sign on behalf of) for carriage by air any stretcher and/or hospital patients or persons under Doctor's care (e.g. heart, pulmonary, pregnant, mental, etc.). Original to be attached to Cabin Attendants' Flight Report. Duplicate for Forwarding Agent's files. Triplicate for Agent, Destination.

Name of Patient _____

Name of Attendant accompanying Patient _____

For passage via CP Air from _____ To _____

Date _____ Type of injury or illness (give details) _____

_____

_____

Is Patient in conditions to travel by air? _____ (a) Seated? _____ (b) Stretcher? _____

*Does Patient have any known or suspected communicable or contagious disease or infection? Give details.

_____

Special diet required? _____

Has Patient or Attendant been supplied with necessary medical hygenic supplies for journey (gauze, etc.)? Drugs administered prior to departure?

_____

Have all arrangements been made at terminating city for ambulance, doctor, hospital? Gives names in each instance.

Ambulance _____ Doctor _____ Hospital _____

*Government laws prohibit the movement of persons by public conveyance who are known to have Communicable Diseases.

In an emergency, the carrying of stretcher cases, etc., will be subject to the Captain's discretion, notwithstanding any regulations to the contrary.

_____

Signature of Attending Physician

Signature of Agent:

_____

Flight No. _____ Date _____

Notice

The passenger, who, notwithstanding his or her status, age or mental or physical condition, is embarking on the above described passage with ultimate destination either within or without the country of departure, is advised that such passage is subject to a tariff condition which limits the liability of the carrier for any injury, illness or disability or any aggravations or consequences thereof caused by or which would not have been sustained but for his or her status, age or mental or physical condition.

Acknowledged by:

Signature of Patient

(or person authorized to sign on his/her behalf) Acknowledgements on behalf of minors must be made by the parent/custodian.

_____

Name _____

Address _____

T-43 1 70

Declaration - Passager invalide

CP Air

Formule à remplir en triplicata par le médecin traitant et le malade (out toute personne dûment autorisée à signer au nom de ce dernier) dans le cas de transport aérien d'un malade sur civière, hospitalisé ou sous les soins d'un médecin (par exemple un malade atteint d'affection cardiaque, mentale, pulmonaire, une femme enceinte, etc.). L'original doit être annexé au compte rendu de vol du personnel commercial de bord et la 2e copie aux dossiers de l'agent (point de départ). La 3e copie est destinée à l'agent (point de destination).

Nom du malade _____

Nom de la personne qui l'accompagne _____

Vol par CP Air en provenance de _____ destination _____

Date _____ Blessure ou maladie (en préciser la nature) _____

_____

_____

Le malade est-il en était de voyager par avion? _____(a) Siège _____ (b) Civière _____

*Le malade est-il atteint d'une maladie transmissible, contagieuse ou infectieuse? Préciser _____

_____

Nécessité d'un régime _____

Le malade ou la personne qui l'accompagne ont-ils suffisamment de pansements, gaze, etc? Des calmants sont-ils administrés avant le départ?

_____

A-t-on pris des dispositions au lieu d'arrivée pour ambulance, médecin, hôpital? Préciser

Ambulance _____ Médecin _____ Hôpital _____

*La loi interdit les transports en commun aux personnes atteintes de maladie transmissible

Nonobstant tout règlement contraire, l'acceptation de malades, blessés, etc., en cas d'urgence, est laissée à la discrétion du commandant de bord.

_____

Signature du médecin traitant

Signature de l'agent

_____

No. de vol _____ Date _____

Avis

Nonobstant la condition, l'âge ou l'état mental ou physique du passager du vol décrit ci-dessus, que le point d'arrivée soit situé ou non dans le pays de départ, avis lui est donné que ce vol est soumis à une disposition tarifaire qui limite la responsabilité du transporteur pour ce qui est des blessures, maladie ou incapacité, leur aggravation ou conséquences, imputables directement ou indirectement à la condition, l'âge ou l'état mental ou physique dudit passager.

Reconnaissance:

Signature du malade (ou de la personne autorisée à signer en son nom). Dans le cas d'un mineur, le père, la mère ou le tuteur doit signer la reconnaissance.

_____

Nom _____

Adresse _____ _____

T-43 1-70

3 Totally Incapacitated and Paraplegic passengers (See Publication 367, Chapter 3 for Reservations	1 The passenger must check-in at least 10 minutes prior to normal check-in time. 2 The passenger must arrange his own transportation at the boarding, en route, and destination points. 3 The passenger must provide all equipment for his comfort and safety. 4 The passenger must be accompanied by a fully qualified attendant. 5 For parties of two or more only one attendant is required per party. 6 A collapsible wheelchair will be accepted for carriage without charge as checked baggage, on the same flight as the passenger who is dependent upon it.	LIMITATIONS ON CARRIAGE 1 Totally Incapacitated Passengers - applies to passengers who are not capable of walking from the air craft door to the passenger seat and are incapable of self-care in flight: All Aircraft: Maximum 2 per flight segment (these can be two totally incapacitated wheelchair passengers OR one stretcher case and one totally incapacitated wheelchair passenger). 2 Paraplegic Passengers - applies to passengers who have paralysis of the lower half of the body: VV/VC/ DC9: Maximum 2 per flight segment. DC8: Maximum 4 per flight segment. Athletic Paraplegic Passengers - applies to those paraplegic passengers who are athletes and who travel singly or in groups, usually to attend paraplegic sporting events: YULSP will consider requests for authorization to carry increased numbers up to approximately double the normal limits for paraplegic passengers. EXCEPTION: Charter Flights: There is no restriction on the number of totally incapacitated and/or paraplegic passengers that will be carried on CHARTER flights, provided that at least one fully qualified attendant accom-panies every six of this type of passenger. NOTE: "Carry-on" Wheelchair Passengers: There is no restriction on the number of "carry-on" wheelchair passengers who need assistance to the aircraft door due to their inability to ascend stairs but are capable of walking from the aircraft door to the passenger seat.

APPENDIX J

The Department of Transportation in Ontario lists four restricted categories for drivers:

- glasses
- external rear-view mirror (deaf person)
- bridged clutch or automatic transmission (single leg amputee)
- hand controls (paralysis, bilateral lower limb amputee).

Only the latter two categories are used here to estimate the number of physically disabled drivers in Canada, since it is the people in these categories for whom use of present public transportation facilities is awkward, hazardous, or impossible. It is these people then, who must rely on private modes of transportation for mobility.

Disabled drivers in Ontario (1969)*:

hand controls	656
bridged clutch/automatic transmission	2,527
total	3,183

Total number of drivers in Ontario (driver's licence plus chauffeur's licence) - (1969)**: 3,239,993

Total number of drivers in Canada (driver's licence plus chauffeur's licence) - (1969)**: 8,671,656

APPENDIX J

Assumption:

that the ratio of disabled drivers to the total number of drivers in Ontario may represent the ratio of disabled drivers to the total number of drivers in Canada.

$$\frac{\text{no. of drivers in Ontario}}{\text{no. of drivers in Canada}} = \frac{\text{no. of disabled drivers in Ontario}}{\text{no. of disabled drivers in Canada}}$$

$$\frac{3,239,993}{8,671,656} = \frac{3183}{X}$$

$$X = \frac{8,671,656 \times 3,183}{3,239,993} = \frac{27,601,881,048}{3,239,993} = 8,519$$

Therefore, the estimated number of physically disabled drivers (as defined above) in Canada in 1969 was 8,520 drivers.

* W.N. Hunt, Dominion Bureau of Statistics, Special Inquiries, Yearbook Division. Personal Communication.

** Dominion Bureau of Statistics. The Motor Vehicle - 1969 Part III Registrations page 11, table 3.